G2000™ Integrated Flight Deck

Cockpit Reference Guide for the Model T240

CESSNA

TTX

GARMIN®

FLIGHT INSTRUMENTS
ENGINE INDICATION SYSTEM
NAV/COM/TRANSPONDER/AUDIO PANEL
AUTOMATIC FLIGHT CONTROL SYSTEM
FMS NAVIGATION
FLIGHT PLANNING
PROCEDURES
HAZARD AVOIDANCE
ADDITIONAL FEATURES
ABNORMAL OPERATION
ANNUNCIATIONS & ALERTS
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This manual reflects the operation of System Software version 1308.10 or later for the Cessna Corvalis T240. Some differences in operation may be observed when comparing the information in this manual to earlier or later software versions.

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WARNING: *Navigation and terrain separation must NOT be predicated upon the use of the terrain avoidance feature. The terrain avoidance feature is NOT intended to be used as a primary reference for terrain avoidance and does not relieve the pilot from the responsibility of being aware of surroundings during flight. The terrain avoidance feature is only to be used as an aid for terrain avoidance. Terrain data is obtained from third party sources. Garmin is not able to independently verify the accuracy of the terrain data.*

WARNING: *The displayed minimum safe altitudes (MSAs) are only advisory in nature and should not be relied upon as the sole source of obstacle and terrain avoidance information. Always refer to current aeronautical charts for appropriate minimum clearance altitudes.*

WARNING: *Do not use outdated database information. Databases used in the G2000 system must be updated regularly in order to ensure that the information remains current. Pilots using any outdated database do so entirely at their own risk.*

WARNING: *Do not use basemap (land and water data) information for primary navigation. Basemap data is intended only to supplement other approved navigation data sources and should be considered as an aid to enhance situational awareness.*

WARNING: *Traffic information shown on system displays is provided as an aid in visually acquiring traffic. Pilots must maneuver the aircraft based only upon ATC guidance or positive visual acquisition of conflicting traffic.*

WARNING: *Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

WARNING: *Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.*

WARNING: *Do not rely on information from the lightning detection system display as the sole basis for hazardous weather avoidance. Range limitations and interference may cause the system to display inaccurate or incomplete information. Refer to documentation from the lightning detection system manufacturer for detailed information about the system.*

WARNING: *The Garmin G2000, as installed in the Cessna Corvalis T240 aircraft, has a very high degree of functional integrity. However, the pilot must recognize that providing monitoring and/or self-test capability for all conceivable system failures is not practical. Although unlikely, it may be possible for erroneous operation to occur without a fault indication shown by the G2000. It is thus the responsibility of the pilot to detect such an occurrence by means of cross-checking with all redundant or correlated information available in the cockpit.*

WARNING: *For safety reasons, G2000 operational procedures must be learned on the ground.*

WARNING: *The United States government operates the Global Positioning System and is solely responsible for its accuracy and maintenance. The GPS system is subject to changes which could affect the accuracy and performance of all GPS equipment. Portions of the Garmin G2000 utilize GPS as a precision electronic NAVigation AID (NAVAID). Therefore, as with all NAVAIDs, information presented by the G2000 can be misused or misinterpreted and, therefore, become unsafe.*

WARNING: *To reduce the risk of unsafe operation, carefully review and understand all aspects of the G2000 Pilot's Guide documentation and the Cessna Corvalis T240 Pilot's Operating Handbook (POH). Thoroughly practice basic operation prior to actual use. During flight operations, carefully compare indications from the G2000 to all available navigation sources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety purposes, always resolve any discrepancies before continuing navigation.*

WARNING: *The illustrations in this guide are only examples. Never use the G2000 to attempt to penetrate a thunderstorm. Both the FAA Advisory Circular, Subject: Thunderstorms, and the Aeronautical Information Manual (AIM) recommend avoiding "by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo."*

WARNING: *Because of variation in the earth's magnetic field, operating the system within the following areas could result in loss of reliable attitude and heading indications. North of 72° North latitude at all longitudes. South of 70° South latitude at all longitudes. North of 65° North latitude between longitude 75° W and 120° W. (Northern Canada). North of 70° North latitude between longitude 70° W and 128° W. (Northern Canada). North of 70° North latitude between longitude 85° E and 114° E. (Northern Russia). South of 55° South latitude between longitude 120° E and 165° E. (Region south of Australia and New Zealand).*

WARNING: *Do not use GPS to navigate to any active waypoint identified as a 'NON WGS84 WPT' by a system message. 'NON WGS84 WPT' waypoints are derived from an unknown map reference datum that may be incompatible with the map reference datum used by GPS (known as WGS84) and may be positioned in error as displayed.*

CAUTION: *The PFD, MFD, and Touchscreen displays use a lens coated with a special anti-reflective coating. DO NOT use chemical cleaning agents. Clean the lens using a microfiber or soft cotton cloth dampened with clean water.*

CAUTION: *The Garmin G2000 does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and the pilot's authority to operate this device under FAA/FCC regulations.*

NOTE: *All visual depictions contained within this document, including screen images of the G2000 panel and displays, are subject to change and may not reflect the most current G2000 system and aviation databases. Depictions of equipment may differ slightly from the actual equipment.*

NOTE: *This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

NOTE: *The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.*

NOTE: *This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our web site at www.garmin.com/prop65.*

NOTE: *Interference from GPS repeaters operating inside nearby hangars can cause an intermittent loss of attitude and heading displays while the aircraft is on the ground. Moving the aircraft more than 100 yards away from the source of the interference should alleviate the condition.*

NOTE: *Use of polarized eyewear may cause the flight displays to appear dim or blank.*

NOTE: *The purpose of this Cockpit Reference Guide is to provide the pilot a resource with which to find operating instructions on the major features of the G2000 system more easily. It is not intended to be a comprehensive operating guide. Complete operating procedures for the system are found in the G2000 Pilot's Guide for this aircraft.*

Part Number	Change Summary
190-01264-00	Initial release
190-01264-01	Updated Flight Instruments section Renamed GPS Navigation section to FMS Navigation Updated VNAV discussion in the FMS Navigation section Added Lightning Detections System to Hazard Avoidance section Added GFDS Connext Weather to Hazard Avoidance section Added Electronic Documents to Additional Features section Added Electronic Checklists to Additional Features section Added ECS to Additional Features section Added SMA to Additional Features section Added Crew Profiles to Additional Features section Updated PFD softkeys in the Appendix Added GTC Screen navigation to the Appendix
190-01264-02	Removed Profile View Updated Transponder Modes Updated AFCS Alerts

Revision	Date of Revision	Affected Pages	Description
A	August, 2013	All	Initial release

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FLIGHT INSTRUMENTS

SELECTING THE ALTIMETER BAROMETRIC PRESSURE SETTING

Turn the **BARO** Knob on the PFD Controller to select the desired setting.

SELECTING STANDARD BAROMETRIC PRESSURE

Press the **BARO** Knob on the GDU Controller to select standard pressure; STD BARO is displayed in the Barometric Setting box.

CHANGING ALTIMETER BAROMETRIC PRESSURE SETTING UNITS

1) Press the **PFD Settings** Softkey on the PFD to display the second-level softkeys.
2) Press the **Other PFD Settings** Softkey.
3) Press the **Altitude Units** Softkey.
4) Press the **IN** Softkey to display the barometric pressure setting in inches of mercury (in Hg).

   Or, press the **HPA** Softkey to display the barometric pressure setting in hectopascals (hPa).
5) Press the **Back** Softkey to return to the previous level of softkeys.

SETTING THE SELECTED ALTITUDE

Turn the **ALT** Knob on the AFCS Controller to set the Selected Altitude in 100-ft increments. When meters are displayed, Selected Altitude is adjusted in 50 meter increments..

If set, the Minimum Descent Altitude/Decision Height (MDA/DH) value is also available for the Selected Altitude.

DISPLAYING SELECTED ALTITUDE IN METERS

1) Press the **PFD Settings** Softkey on the PFD to display the second-level softkeys.
2) Press the **Other PFD Settings** Softkey.
3) Press the **Altitude Units** Softkey.
4) Press the **Meters** Softkey to turn on metric altitude readouts.
5) Press the **Back** Softkey to return to the previous level of softkeys.

SETTING THE BARO TRANSITION ALERT

1) From the **Home** Screen on the Touchscreen Controller**,** touch **Utilities** > **Setup** > **Avionics Settings**.
2) Touch the **Alerts** Tab.

   • To turn the alert on or off, touch the **Baro Transition Alert Enable** Button. An illuminated green line below "Enable" indicates that the alert is on.

   • To set or change the Baro Transition Alert Altitude, touch the **Baro Transition Alert** Data Field. Enter the desired altitude on the keypad, and touch **Enter**.

CHANGE NAVIGATION SOURCES

1) Press the **Active Nav** Softkey on the PFD to change from FMS to VOR1 or LOC1.
2) Press the **Active Nav** Softkey again to change from VOR1 or LOC1 to VOR2 or LOC2.
3) Press the **Active Nav** Softkey a third time to return to FMS.

CHANGING THE SELECTED GPS CDI SETTING

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Setup** > **Avionics Settings**.
2) Touch the **System** Tab.
3) Touch the **GPS CDI** Data Field.
4) Touch desired setting (**2.00 NM**, **1.00 NM**, **0.30 NM**, or **AUTO**).

CHANGING NAVIGATION ANGLE SETTING

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Setup** > **Avionics Settings**.
2) Touch the **Units** Tab.
3) Touch the **Nav Angle** Data Field.
4) Touch the desired setting (**Magnetic** or **True**).

ENABLE/DISABLE OBS MODE WHILE NAVIGATING WITH FMS

1) Press the **OBS** Softkey on the PFD to select OBS Mode.
2) Turn the **CRS** Knob on the AFCS Controller to select the desired course to/from the waypoint. Press the **CRS** Knob to synchronize the Selected Course with the bearing to the next waypoint.
3) Press the **OBS** Softkey again to return to automatic waypoint sequencing.

ADJUSTING SELECTED HEADING

Turn the **HDG** Knob on the AFCS Controller to set the selected heading.

Press the **HDG** Knob to synchronize the bug to the current heading.

ADJUSTING SELECTED COURSE

Turn the **CRS** Knob on the AFCS Controller to set the Selected Course.

Press the **CRS** Knob to re-center the CDI and return the course pointer to the bearing of the active waypoint or navigation station (see OBS Mode for adjusting an FMS course).

SELECTING BEARING DISPLAY AND CHANGING SOURCES

1) Press the **PFD Settings** Softkey on the PFD.
2) Press a bearing softkey (**Bearing 1** or **Bearing 2**) to display the desired bearing pointer and information window with a NAV source.
3) Press the bearing softkey again to change the bearing source to FMS.
4) To remove the bearing pointer and information window, press the bearing softkey again.

SET BAROMETRIC MINIMUM DESCENT ALTITUDE

1) From the **Home** Screen on the Touchscreen Controller**,** touch **Utilities** > **Minimums**.
2) Touch **Baro, or Temp Comp** (use the keypad to enter the desired temperature for temperature compensated VNAV) (**OFF** is selected by default). To remove the window from the PFD display, touch **OFF**.
3) Use the keypad to enter the desired altitude (from zero to 16,000 feet for Baro), and touch **Enter**.

DISPLAYING WIND DATA

1) Press the **PFD Settings** Softkey on the PFD.
2) Press the **Other PFD Settings** Softkey.
3) Press the **Wind** Softkey to display wind data display options.
4) Press one of the option softkeys (**Option 1**, **Option 2**, or **Option 3**) to change how wind data is displayed.
5) To remove the window, press the **Off** Softkey.

CHANGING VSPEEDS AND TURNING VSPEED FLAGS ON/OFF

1) From the **Home** Screen on the Touchscreen Controller**,** touch **Speed Bugs**
2) To turn the Vspeed on or off, touch the **On** Button . The illuminated green line below "On" indicates that the Vspeed flag is on.
3) To set or change a Vspeed value, touch the Data Field for the Vspeed, enter a value in the keypad, and touch **Enter.** The pencil icon next to the Vspeed value indicates that the Vspeed is a pilot-entered value.

TURNING ALL VSPEED FLAGS ON/OFF

1) From the **Home** Screen on the Touchscreen Controller**,** touch **Utilities** > **Speed Bugs**.
2) To activate all Vspeed flags, touch the **All Bugs On** Button.
3) To remove all Vspeed flags, touch the **All Bugs Off** Button.

RESTORING ALL VSPEED DEFAULTS

1) From the **Home** Screen on the Touchscreen Controller**,** touch **Utilities** > **Speed Bugs**.
2) Touch the **Restore All Defaults** Button.

ENABLE SPLIT SCREEN PFD

1) Press the **PFD Settings** Softkey on the PFD.
2) Press the **PFD Mode** Softkey. **Split** is now annunciated on the softkey label and the multi-function pane is displayed to the right of the Primary Flight Display.

DISABLE SPLIT SCREEN PFD

1) Press the **PFD Settings** Softkey on the PFD.
2) Press the **PFD Mode** Softkey. **FULL** is now annunciated on the softkey label and the multi-function pane is no longer displayed.

SYNTHETIC VISION SYSTEM

WARNING: *Use appropriate primary systems for navigation, and for terrain and obstacle avoidance. SVT is intended as an aid to situational awareness only and may not provide either the accuracy or reliability upon which to solely base decisions and/or plan maneuvers to avoid terrain, obstacles, or traffic.*

WARNING: *Do not use SVT runway depiction as the sole means for determining the proximity of the aircraft to the runway or for maintaining the proper approach path angle during landing.*

Garmin SVT™ (Synthetic Vision Technology) functionality is offered as an enhancement to the G2000 system.

SVT is primarily comprised of a computer-generated forward-looking, attitude aligned view of the topography immediately in front of the aircraft from the pilot's perspective. SVT information is shown on the primary flight display (PFD).

In addition to SVT enhancement to the PFD, the following features have been added to the PFD:

- Flight Path Marker
- Horizon Heading Marks
- Terrain and Obstacle Alerting
- Three-dimensional Traffic
- Airport Signs
- Runway Display

Activating and deactivating SVT:

Press the **PFD Settings** Softkey > **Attitude Overlays** Softkey > **Synthetic Terrain** Softkey. The SVT display will cycle on or off with each press of the **Synthetic Terrain** Softkey.

NOTE: *Pathways, Horizon Headings and Airport Signs are only available if Synthetic Terrain is active.*

Activating and deactivating Pathways:

Press the **PFD Settings** Softkey > **Attitude Overlays** Softkey > **Pathways** Softkey. Pathways will cycle on or off with each press of the **Pathways** Softkey.

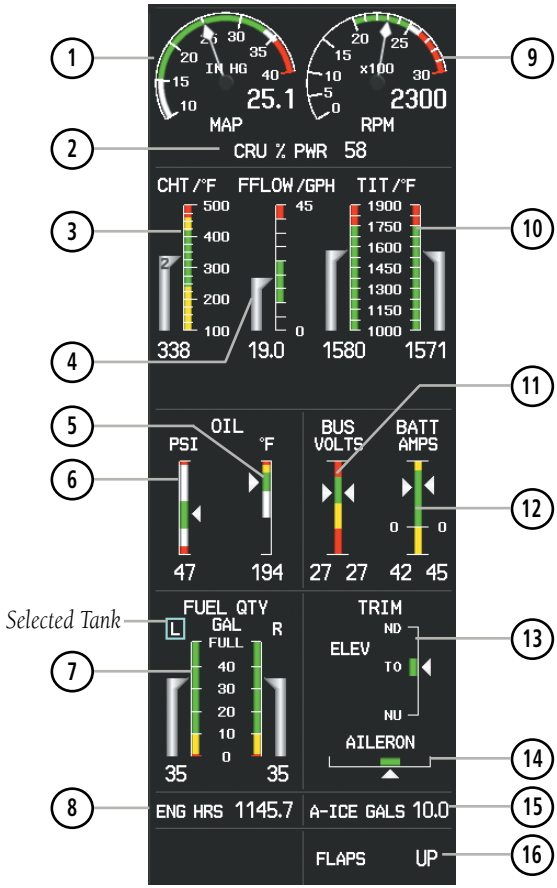
Activating and deactivating Horizon Headings:

Press the **PFD Settings** Softkey > **Attitude Overlays** Softkey > **Horizon Heading** Softkey. The Horizon Heading display will cycle on or off with each press of the **Horizon Heading** Softkey.

Activating and deactivating Airport Signs:

Press the **PFD Settings** Softkey > **Attitude Overlays** Softkey > **Airport Signs** Softkey. Airport Signs will cycle on or off with each press of the **Airport Signs** Softkey.

ENGINE INDICATION SYSTEM



EIS Display (Normal Mode)

1. *Manifold Pressure*
2. *Cruise Power Display*
3. *Cylinder Head Temperature*
4. *Fuel Flow*
5. *Oil Temperature*
6. *Oil Pressure*
7. *Fuel Quantity*
8. *Engine Hours Display*
9. *Tachometer*
10. *Turbo Inlet Temperature*
11. *Dual Voltmeter*
12. *Dual Ammeter*
13. *Elevator Trim*
14. *Aileron Trim*
15. *Anti-Ice Fluid Quantity (Optional)*
16. *Flaps Position Indicator*

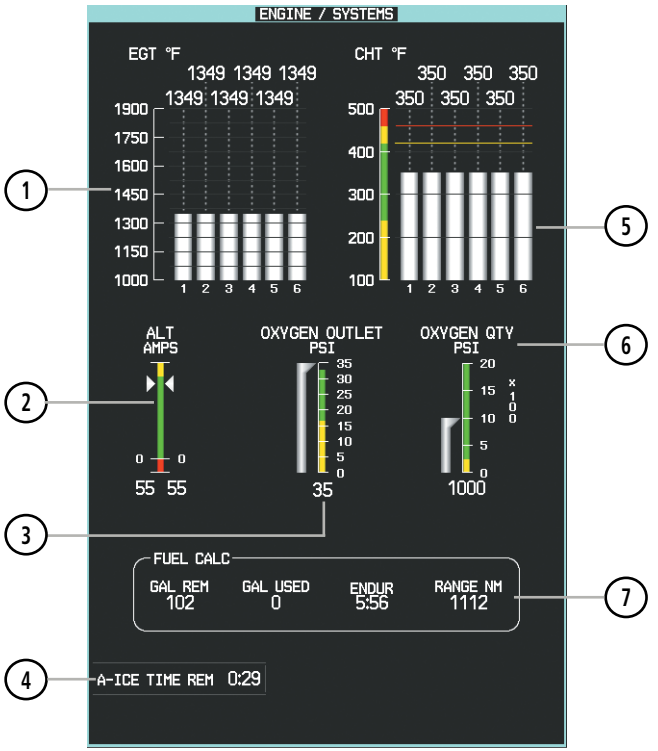
ENGINE/SYSTEM DISPLAY

The Engine/Systems Display shows engine, electrical, oxygen, and fuel calculation information using bar graphs, digital readouts, and slide bars on the selected Display Pane.

Accessing the Engine/Systems Display:

From the **Home** Screen on the Touchscreen Controller, touch **Aircraft Systems** > **Engine/Sys**.

NOTE: *The Engine/Systems display is shown in Half Mode, and is not available in Full Mode or Reversionary Mode.*



Engine and Systems Display

1	**Exhaust Gas Temperature (EGT °F)**	For each cylinder, the exhaust gas temperatures are shown in degrees Fahrenheit (°F). Each bar segment on the graph represents 25 degrees.
2	**Alternator Amps (ALT AMPS)**	Currents for the right and left alternators are displayed using vertical bar indicators and readouts
3	**Oxygen Outlet Pressure Gauge (OXY OUTLET PSI)**	Oxygen outlet pressure in psi.
4	**Anti-ice Time Remaining (A-ICE TIME REM)**	Anti-ice time remaining based on the remaining fluid quantity. (Optional).
5	**Oxygen Quantity Gauge (OXY QTY PSI)**	Oxygen amount in psi; note that gauge increment is 100 psi.
6	**Cylinder Head Temperature (CHT °F)**	For each cylinder, the head temperatures are shown in degrees Fahrenheit (°F). Each bar segment on the graph represents 100 degrees.
7	**Fuel Calculations Group (GAL REM, GAL USED, ENDUR, RANGE NM)**	The fuel totalizer fuel remaining and used and the totalizer-based endurance and range calculations are displayed

Enabling/Disabling the Oxygen System:

1) From the **Home** Screen on the Touchscreen Controller, touch **Aircraft Systems**.
2) Touch the **Oxygen** Button. When the button annunciator is green, oxygen is enabled, annunciator is gray when disabled.

FUEL CALCULATIONS

NOTE: *Fuel calculations do not use the aircraft fuel quantity indicators and are calculated from the last time the fuel totalizer quantity was reset.*

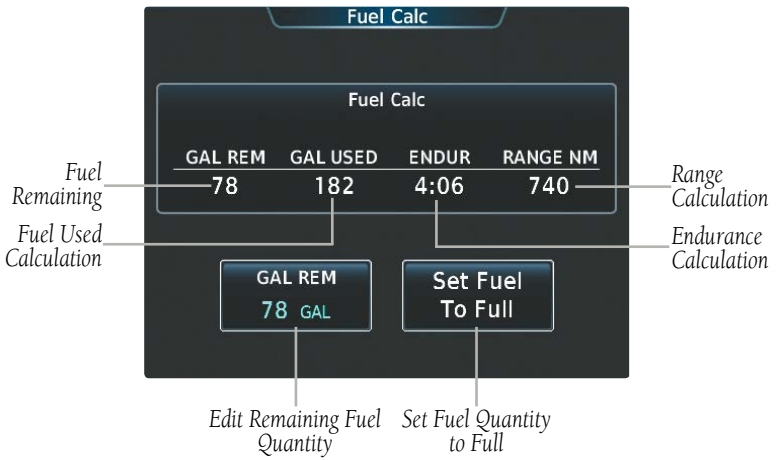
The system calculates Fuel used (GAL USED), endurance (ENDUR), and range (RANGE NM) based on the displayed fuel remaining (GAL REM), fuel flow, and groundspeed.

Adjusting the Totalizer-Based Fuel Remaining:

1) From the **Home** Screen on the Touchscreen Controller, touch **Aircraft Systems** > **Fuel Calc**.
2) Touch the **Gal Rem** Button.
3) Enter the fuel quantity using the numeric keypad or large and small right knobs, then touch the **Enter** Button. The totalizer-based fuel remaining is set to the entered fuel quantity and the GAL USED is set to zero.

Setting the Totalizer-Based Fuel Remaining to Full Fuel:

1) From the **Home** Screen on the Touchscreen Controller, touch **Aircraft Systems** > **Fuel Calc**.
2) Touch the **Set To Full Fuel** Button. The totalizer-based fuel remaining is set to the aircraft's usable fuel capacity and the GAL USED is set to zero.



Fuel Calculations Screen

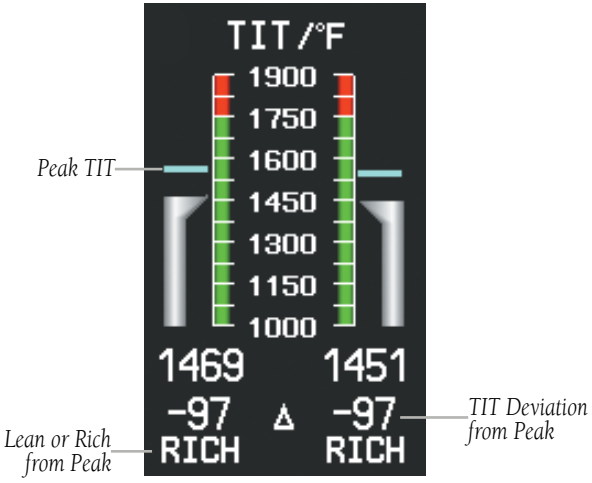
ENGINE LEAN ASSIST MODE

NOTE: *Consult the Cessna Corvalis T240 Aircraft Flight Manual (AFM) for leaning procedures.*

While the Lean Assist Mode is active, the system indicates the peak of each TIT on the EIS display with a light blue bar which remains at the peak Turbo Inlet Temperature. Readouts below each TIT gauge indicate the difference between each peak TIT and the current temperature. An indicator below the readout shows whether each TIT is operating 'LEAN' or 'RICH' of peak TIT.

Enabling/Disabling Lean Assist Mode:

1) From the **Home** Screen on the Touchscreen Controller, touch **Aircraft Systems**.
2) Touch the **Lean Assist** Button. The button annunciator is green when Lean Assist Mode is enabled, annunciator is gray when disabled.



Engine Lean Assist Mode (EIS Display)

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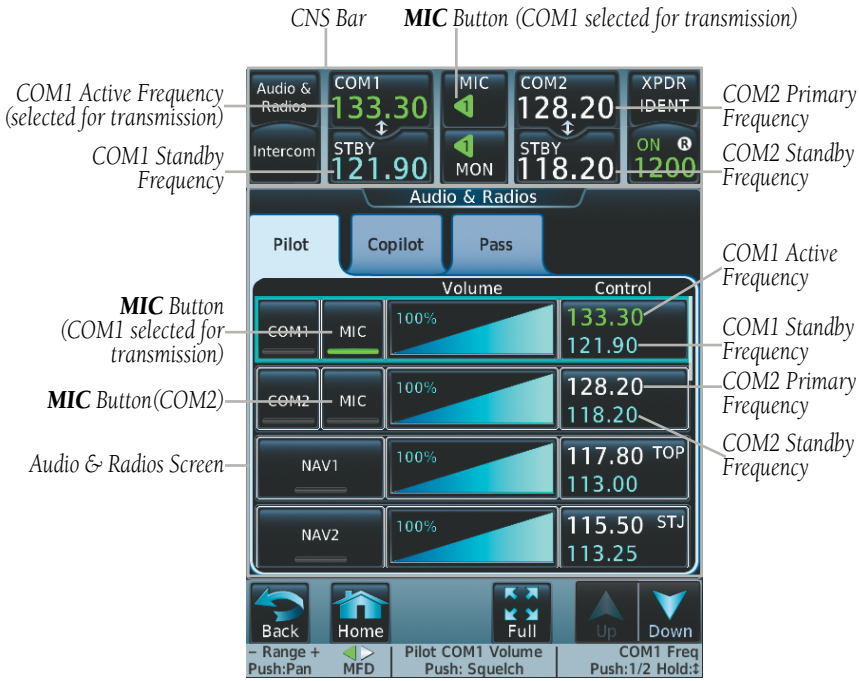
NAV/COM/TRANSPONDER/AUDIO PANEL



Selecting a COM Radio for Transmission

SELECTING A COM RADIO

Selecting a COM Radio for transmission:

Touch the **MIC** Button in the CNS Bar on the Touchscreen Controller to switch between COM radios until the desired COM is selected.

Or:

1) Touch the **Audio & Radios** Button to display the Audio & Radios Screen.

2) If necessary, touch the **Copilot** Tab.

3) If necessary, touch the **Sync to Pilot** Button to disable synchronizing selections to the pilot.

4) Touch the desired **MIC** Button on the Audio & Radios Screen to select the COM radio for transmission.

Or:

1) On the PFD Controller, press the **COM/NAV** Button to display the COM/NAV Window on the PFD.
2) Turn the large **PFD** Knob to move the cursor to the MIC field.
3) Turn the small **PFD** Knob to select the desired COM.
4) Press the **COM/NAV** Button to hide the COM/NAV Window.

Selecting a COM Radio for monitoring:

Touch the **MON** Button in the CNS Bar on the Touchscreen Controller to monitor the COM not selected for transmission.

Or:

1) Touch the **Audio & Radios** Button to display the Audio & Radios Screen.
2) If necessary, touch the **Copilot** Tab.
3) If necessary, touch the **Sync to Pilot** Button to disable synchronizing selections to the pilot.
4) Touch the **COM1** Button or **COM2** Button to select the COM1/COM2 radio for monitoring.

COM FREQUENCY TUNING

Selecting a COM frequency using the Touchscreen Controller:

1) Touch the COM1 **STBY** Button or COM2 **STBY** Button in the CNS Bar on the Touchscreen Controller to display the COM1/COM2 Standby Screen.
2) Use the keypad to select the frequency.
3) Touch the **Enter** Button to accept the new frequency as the COM1/COM2 standby frequency; or touch the **XFER** Button to accept the new frequency as the COM1/COM2 active frequency and transfer the previously active frequency to the standby frequency.

Or:

1) Touch the **Audio & Radios** Button to display the Audio & Radios Screen.
2) Touch the COM1/COM2 frequency button to display the COM1/COM2 Standby Screen.
3) Use the keypad to select the desired frequency.
4) Touch the **Enter** Button to accept the new frequency as the COM1/COM2 standby frequency; or touch the **XFER** Button to accept the new frequency as the COM1/COM2 active frequency and transfer the previously active frequency to the standby frequency.

Or:

1) Press the small right knob to select the COM desired for tuning (selected standby frequency is light blue).
2) Turn the large and small right knobs to tune the frequency (Large knob increases/decreases MHz; Small knob increases/decreases kHz).
3) Press the small right knob to enter the new frequency as the standby frequency; or press and hold the small right knob to transfer the new standby frequency to the active frequency.

Selecting a COM frequency using the PFD Controller:

1) On the PFD Controller, press the **COM/NAV** Button to display the COM/NAV Window on the PFD.
2) Turn the large **PFD** Knob to move the cursor to the **SOURCE** field.
3) Turn either **PFD** Knob to select the desired COM.
4) Press the **ENT** Key or the small **PFD** Knob to accept the selection and move the cursor to the **STBY** frequency field.
5) Turn the small **PFD** Knob one click to activate the editing cursor (flashing).
6) Turn the large and small **PFD** knobs to select the frequency (Large knob increases/decreases MHz; Small knob increases/decreases kHz)
7) Press the **ENT** Key or the small **PFD** Knob to accept the selection and move the cursor to the **XFER?** field.
8) Press the **ENT** Key or the small **PFD** Knob to accept the new frequency as the COM1/COM2 active frequency and transfer the previously active frequency to the standby frequency.

CHANGING COM FREQUENCY CHANNEL SPACING

Changing COM frequency channel spacing:

1) From the **Home** Screen on the Touchscreen Controller , touch **Utilities > Setup** > **Avionics Settings**.
2) Touch the **Systems** Tab (if necessary). Scroll the list to show the COM Channel Spacing button.
3) Touch the COM Channel Spacing button to display the choice of **25.0 kHz** or **8.33 kHz**.

SIMULTANEOUS COM OPERATION

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) Touch the **Copilot** Tab.
3) Touch the **Sync to Pilot** Button to disable/enable synchronizing the copilot COM selections to the pilot.
4) Touch the COM1/COM2 MIC Button to select COM1/COM2 for copilot transmissions.

3D AUDIO

When 3D Audio is enabled, the aural message "3D audio left" is heard in the left ear followed by "3D audio right" in the right ear.

Enabling/Disable 3D Audio:

1) From **Home** on the Touchscreen Controller, touch **Utilities** > **Setup** > **Avionics Settings**.
2) If necessary, touch the **Audio** Tab
3) Touch the **Enable** Button for: Pilot 3D Audio, Copilot 3D Audio. A green annunciator indicates 3D Audio is enabled. A gray annunciator indicates 3D Audio is disabled.

Configuring Pilot/Copilot L-R Swap:

1) From **Home** on the Touchscreen Controller, touch **Utilities** > **Setup** > **Avionics Settings**.
2) If necessary, touch the **Audio** Tab
3) Touch the **Enable** Button for: Pilot L-R Swap, Copilot L-R Swap. A green annunciator indicates L-R Swap is enabled. A gray annunciator indicates L-R Swap is disabled.

SELECTING A NAV RADIO

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) If necessary, touch the **Copilot** Tab.

3) If necessary, touch the **Sync to Pilot** Button to disable synchronizing selections to the pilot.

4) Touch the **NAV1** or **NAV2** Button on the Audio & Radios Screen to select/deselect the radio for monitoring.

NAV RADIO TUNING

Selecting a NAV frequency using the Touchscreen Controller:

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.

2) Touch the NAV1/NAV2 frequency button to select NAV1/NAV2 for tuning, and display the NAV1/NAV2 frequency tuning screen.

3) Use the keypad to select the desired frequency.

4) Touch the **Enter** Button to enter the new frequency as the NAV1/NAV2 standby frequency; or touch the **XFER** Button to enter the new frequency as the NAV1/NAV2 standby frequency and transfer it to the active frequency.

Or:

1) Touch the **Audio & Radios** Button to display the Audio & Radios Screen.

2) Touch the NAV1/NAV2 volume slider to select NAV1/NAV2 for tuning.

3) Turn the large and small right knobs to tune the frequency (Large knob increases/decreases MHz; Small knob increases/decreases kHz).

4) Press the small right knob to enter the new frequency as the NAV1/NAV2 standby frequency; or press and hold the small right knob to transfer the new standby frequency to the active frequency.

Selecting a NAV frequency using the PFD Controller:

1) On the PFD Controller, press the **COM/NAV** Button to display the COM/NAV Window.

2) Turn the large **PFD** Knob to move the cursor to the **SOURCE** field.

3) Turn either **PFD** Knob to select the desired NAV.

4) Press the **ENT** Key or the small **PFD** Knob to accept the selection and move the cursor to the **STBY** frequency field.

5) Turn the small **PFD** Knob one click to activate the editing cursor (flashing).

6) Turn the large and small **PFD** knobs to tune the frequency (Large knob increases/decreases MHz; Small knob increases/decreases kHz).

7) Press the **ENT** Key or the small **PFD** Knob to accept the selection and move the cursor to the **XFER?** field.

8) Press the **ENT** Key or the small **PFD** Knob to transfer the standby frequency to the active frequency.

ADF TUNING (OPTIONAL)

Selecting an ADF frequency:

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) Scroll the list to find the ADF enable/disable button.
3) Touch the ADF control button to display the ADF Mode/Tuning Screen.
4) Use the keypad to select the desired frequency.
5) Touch the **Enter** Button to enter the new frequency as the ADF standby frequency; or touch the **XFER** Button to enter the new frequency as the ADF standby frequency and transfer it to the active frequency.

Or:

1) Touch the **Audio & Radios** Button to display the Audio & Radios Screen.
2) Scroll the list to find the ADF.
3) Touch the ADF control button to display the ADF Mode/Tuning Screen.
4) Turn the large and small right knobs to tune the frequency (Large knob increases/decreases kHz; Small knob selects .5 kHz).
5) Press the small right knob to enter the new frequency as the ADF standby frequency; or press and hold the small right knob to transfer the new standby frequency to the active frequency.

Finding and selecting an ADF frequency:

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) Scroll the list to find the ADF.
3) Touch the ADF control button to display the ADF Mode/Tuning Screen.
4) Touch the **Find** Button.
5) Touch the tab for the desired type of frequency (Recent, Nearest, Dest, Flight Plan, or Favorite).

6) Scroll the list to find the desired frequency.
7) Touch the frequency button to enter the new frequency as the ADF standby frequency.

Selecting an ADF receiver mode:

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) Scroll the list to find the ADF.
3) Touch the ADF control button to display the ADF Mode/Tuning Screen.
4) Touch the **ANT**, **ADF**, **ADF/BFO**, or **ANT/BFO** Button to select the ADF mode.

Transferring the active and standby ADF frequencies:

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) Scroll the list to find the ADF.
3) Touch the ADF control button.
4) Touch the **XFER** Button

Or

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) Scroll the list to find the ADF.
3) Touch the ADF volume slider to select the ADF for transfer.
4) Press and hold the small right knob to transfer the frequencies.

DME TUNING (OPTIONAL)

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) Scroll the list to find the DME.
3) Touch the DME mode control button to display the DME Mode Window.
4) Touch the **NAV1 Mode**, **NAV2 Mode**, or **HOLD Mode** Button to select the DME mode.

TRANSPONDER OPERATION

Enter a Transponder Code

Transponder Display and Controls

1) Touch the Transponder Mode Button on the Touchscreen Controller to display the Transponder Screen.
2) Use the keypad to select the desired code.
3) Touch the **Enter** Button to enter the new code.

Or:

1) Touch the Transponder Mode Button to display the Transponder Screen.
2) Turn the small right knob one click either way to erase the previous code and place the editing cursor on the first digit.
3) Turn the small right knob to enter the first digit.
4) Turn the large right knob to move the cursor to the next digit.
5) Turn the small right knob to enter the next digit, repeat steps 4 and 5 until complete.
6) Touch the **Enter** Button, or push the small right knob, to enter the new code.

Selecting a Transponder Mode:

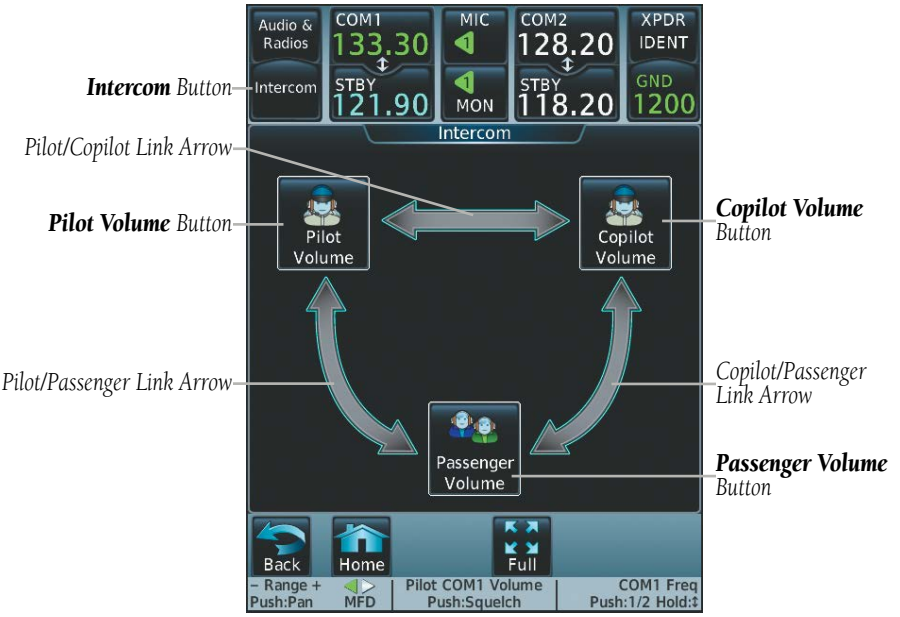
1) Touch the Transponder Mode Button to display the Transponder Screen.
2) Touch a Mode Button to activate the transponder mode.

Transponder Mode Selection

Transponder Mode	Description
Altitude Reporting (ALT)	Altitude Reporting Mode is automatically selected when the aircraft becomes airborne. Altitude Reporting Mode may also be selected manually by selecting the **Altitude Reporting** Button. Altitude Mode Generates Mode A, Mode C, and Mode S replies as well as transmissions of acquisition squitter and extended squitter, including ADS-B Out.
On	ON Mode can be selected at any time by selecting the **On** Button. ON Mode generates Mode A and Mode S replies as well as transmission of acquisition squitter and extend squitter, including ADS-B Out. Mode C altitude reporting is inhibited.
Ground (GND)	Ground mode is normally selected automatically when the aircraft is on the ground. Ground Mode may also be selected manually by selecting the **Ground** Button. Ground Mode generates Mode S replies to discrete interrogations as well as transmission of acquisition squitter and extended squitter, including ADS-B Out. Mode A, Mode C, and Mode S all-call replies are inhibited.
Standby (STBY)	Standby Mode can be selected at any time by selecting the **Standby** Button. In Standby Mode, the transponder is powered, but no replies or squitters are transmitted.

INTERCOM

Touch the Link Arrow to enable (green) or disable (gray) a link.

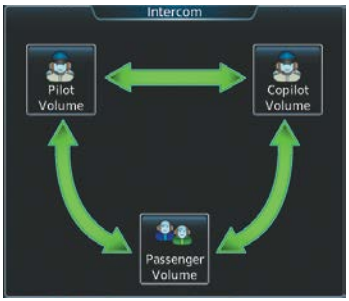


Intercom Controls

NOTE: *In the default ICS configuration, only the pilot and copilot positions can hear aircraft alerts.*

All Intercom Mode

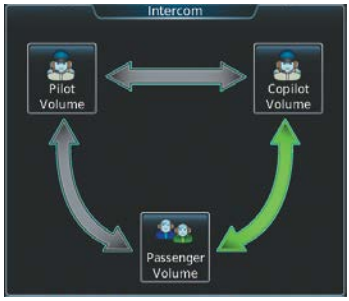
In 'All Intercom' mode the Pilot, Copilot, and Passengers hear each other and hear the aircraft audio.



All Intercom Mode

Copilot-Passenger Intercom Mode

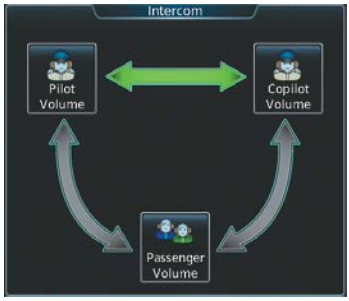
In 'Copilot-Passenger' mode the Pilot, Copilot, and Passengers hear the aircraft audio. The Copilot and Passengers also hear each other.



Copilot-Passenger Intercom Mode

Pilot-Copilot Intercom Mode

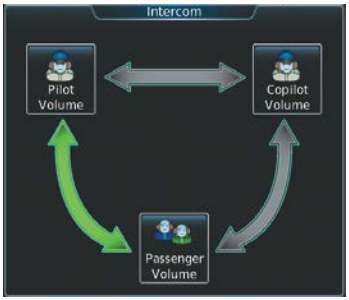
In 'Pilot-Copilot' mode the Pilot and Copilot hear the aircraft audio and each other. The Passengers hear each other.



Pilot-Copilot Intercom Mode

Pilot-Passenger Intercom Mode

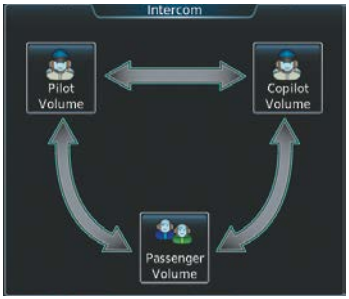
In 'Pilot-Passenger' mode the Pilot, Copilot, and Passengers hear the aircraft audio. The Pilot and Passengers also hear each other. The Copilot has the option to use Split-COM mode.



Pilot-Passenger Intercom Mode

All Isolate Mode

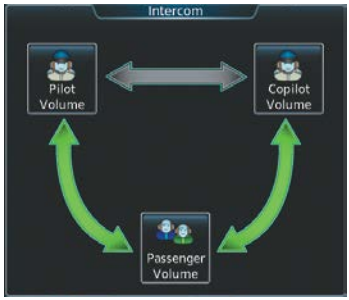
In 'All Isolate' mode the Pilot and Copilot hear the aircraft audio. The Copilot has the option to use Split-COM mode. The Passengers hear each other.



All Isolate Mode

Pilot-Passenger/Copilot-Passenger Intercom Mode

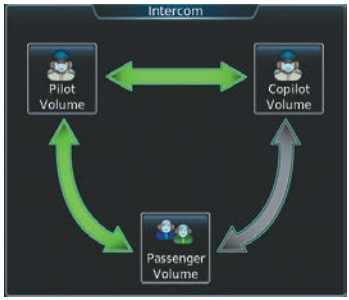
In 'Pilot-Passenger/Copilot-Passenger' mode the Pilot, Copilot, and Passengers hear the aircraft audio. The Passengers hear the pilot, copilot, and each other. The Copilot has the option to use Split-COM mode.



Pilot-Passenger/Copilot-Passenger Intercom Mode

Pilot-Passenger/Pilot-Copilot Intercom Mode

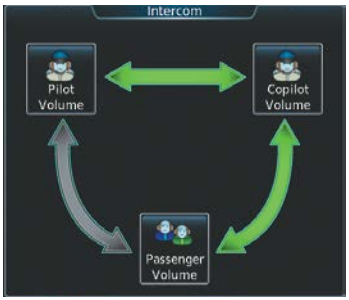
In 'Pilot-Passenger/Pilot-Copilot' mode the Pilot and Copilot hear the aircraft audio and each other. The Passengers hear the Pilot and each other.



Pilot-Passenger/Pilot-Copilot Intercom Mode

Copilot-Passenger/Pilot-Copilot Intercom Mode

In 'Copilot-Passenger/Pilot-Copilot' mode the Pilot and Copilot hear the aircraft audio and each other. The Passengers hear the Copilot and each other.



Copilot-Passenger/Pilot-Copilot Intercom Mode

Adjusting intercom volume:

1) Touch the **Intercom** Button on the Touchscreen Controller to display the Intercom Screen.
2) Touch the **Pilot Volume**, **Copilot Volume**, or **Passenger Volume** button to display the Pilot, Copilot, or Passenger Intercom Settings Screen.
3) Adjust the volume by using the middle knob or by sliding your finger on the volume slider.

Adjusting intercom squelch:

1) Touch the **Intercom** Button on the Touchscreen Controller to display the Intercom Screen.
2) Touch the **Pilot Volume**, **Copilot Volume**, or **Passenger Volume** button to display the Pilot, Copilot, or Passenger Intercom Settings Screen.
3) Touch the Squelch Mode Button to turn off Auto Squelch.
4) Adjust the squelch by using the middle knob or by sliding your finger on the squelch slider.

DIGITAL CLEARANCE PLAYER

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) If necessary, touch the **Pilot** Tab.
3) Scroll the list to find **Playback**.
4) Touch the Play Button ( ) to play the latest recorded memory block. The Stop Button ( ) is displayed while the audio is playing. Touch the Stop Button during play of a memory block to stop play. When the present memory block has finished playing the Play Button is displayed again.
5) Touch the Previous Button ( ) to play the previously recorded memory block. Each subsequent press of the Previous Button selects the previously recorded memory block, if any exist.
6) Touch the Next Button ( ) to play the next recorded memory block. Each subsequent press of the Next Button selects the next recorded memory block, if any more exist.

ENTERTAINMENT INPUTS

The pilot can select each of the entertainment inputs independently. The copilot and passengers can also select each entertainment independently if not synchronized to the pilot. If the copilot and/or passengers are synchronized to the pilot, they will hear the entertainment inputs the pilot has selected at the volume level the pilot has selected. Sync to Pilot does not synchronize the copilot or passenger settings for Music 1 or Music 2 mute, and Clicks.

Selecting/deselecting MUSIC1/MUSIC2 input:

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) If necessary, touch the **Copilot** Tab or the **Pass** Tab.
3) If necessary, touch the **Sync to Pilot** Button to disable synchronizing selections to the pilot.
4) Scroll the list to find Music1 or Music2.
5) Touch the **Music1** or **Music2** Button to enable/disable (green indicates enabled) the Music1/Music2 input for the selected position (pilot, copilot, or passengers).

Configuring Music1/Music2 Mute Settings:

1) Touch the **Audio & Radios** Button on the Touchscreen Controller to display the Audio & Radios Screen.
2) If necessary, touch the **Copilot** Tab or the **Pass** Tab.
3) If necessary, touch the **Sync to Pilot** Button to disable synchronizing selections to the pilot.
4) Scroll the list to find Music1 or Music2.
5) Touch the **Mute Settings** Button associated with Music1 or Music2 to display the Mute Settings Window.
6) Select any of the **Intercom**, **Radio Inputs**, or **Aural Alerts** Buttons to select which items will mute Music1 or Music2.
7) If necessary, touch **Sync to Pilot** if synchronizing is desired.

AUTOMATIC FLIGHT CONTROL SYSTEM

NOTE: *If sensor information (other than attitude) required for a flight director mode becomes invalid or unavailable, the flight director automatically reverts to the default mode for that axis.*

NOTE: *If the attitude information required for the default flight director modes becomes invalid or unavailable, the autopilot automatically disengages.*

FLIGHT DIRECTOR ACTIVATION

An initial press of an AFCS Controller key listed in the following table (when the flight director is not active) activates the pilot-side flight director in the listed modes.

Control Pressed	Modes Selected			
	Lateral		Vertical	
FD Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
AP Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
CWS Button	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
GA Switch	Go Around (in air)	GA	Go Around (in air)	GA
ALT Key	Roll Hold (default)	ROL	Altitude Hold	ALT
VS Key	Roll Hold (default)	ROL	Vertical Speed	VS
FLC Key	Roll Hold (default)	ROL	Flight Level Change	FLC
VNV Key	Roll Hold (default)	ROL	Vertical Path Tracking*	VPTH
NAV Key	Navigation**	FMS VOR LOC	Pitch Hold (default)	PIT
BC Key	Backcourse***	BC	Pitch Hold (default)	PIT
APR Key	Approach**	FMS VOR LOC	Pitch Hold (default)	PIT
HDG Key	Heading Select	HDG	Pitch Hold (default)	PIT

Valid VNV flight plan must be entered before **VNV Key press activates flight director.*

***The selected navigation receiver must have a valid VOR or LOC signal or active FMS course before **NAV** or **APR** Key press activates flight director.*

****The selected navigation receiver must have a valid LOC signal before **BC** Key press activates flight director.*

VERTICAL MODES

Vertical Mode	Description	Control	Annunciation	
Pitch Hold	Holds aircraft pitch attitude; may be used to climb/descend to the Selected Altitude	(default)	PIT	
Selected Altitude Capture	Captures the Selected Altitude	*	ALTS	
Altitude Hold	Holds current Altitude Reference	**ALT** Key	ALT	nnnnn FT
Vertical Speed	Holds aircraft vertical speed; may be used to climb/descend to the Selected Altitude	**VS** Key	VS	nnnn FPM
Flight Level Change	Holds aircraft airspeed while aircraft is climbing/descending to the Selected Altitude	**FLC** Key	FLC	nnn KT
Vertical Path Tracking	Captures and tracks descent legs of an active vertical profile	**VNV** Key	VPTH	
VNV Target Altitude Capture	Captures the Vertical Navigation (VNV) Target Altitude	**	ALTV	
Glidepath***	Captures and tracks the SBAS glidepath on approach	**APR** Key	GP	
Glideslope	Captures and tracks the ILS glideslope on approach		GS	
Go Around	Commands a constant pitch angle and wings level	**GA** Switch	GA	
Level	Autopilot engages and commands pitch angle necessary to establish zero vertical fpm	****	LVL	

* *ALTS is armed automatically when PIT, VS, FLC, or GA is active, and under VPTH when the Selected Altitude is to be captured instead of the VNV Target Altitude.*

** *ALTV is armed automatically under VPTH when the VNV Target Altitude is to be captured instead of the Selected Altitude.*

*** *GP is available when SBAS is available.*

**** *Level mode can only become activated as a function of Electronic Stability and Protection (ESP). Refer to the Additional Features section for a detailed discussion of the optional ESP feature.*

LATERAL MODES

Lateral Mode	Description	Control	Annunciation
Roll Hold	Holds the current aircraft roll attitude or rolls the wings level, depending on the commanded bank angle	(default)	ROL
Heading Select	Captures and tracks the Selected Heading	**HDG** Key	HDG
Navigation, FMS	Captures and tracks the selected navigation source (FMS, VOR, LOC)	**NAV** Key	FMS
Navigation, VOR Enroute Capture/Track			VOR
Navigation, LOC Capture/Track (No Glideslope)			LOC
Backcourse	Captures and tracks a localizer signal for backcourse approaches	**BC** Key	BC
Approach, FMS	Captures and tracks the selected navigation source (FMS, VOR, LOC)	**APR** Key	FMS
Approach, VOR Capture/Track			VAPP
Approach, LOC Capture/Track (Glideslope Mode automatically armed)			LOC
Go Around	Commands a constant pitch angle and wings level	**GA** Switch	GA
Level	Autopilot engages and commands wings level	*	LVL

* *Level mode can only become activated as a function of Electronic Stability and Protection (ESP). Refer to the Additional Features section for a detailed discussion of the optional ESP feature.*

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FMS NAVIGATION

DIRECT-TO NAVIGATION

Direct-to Navigation from the Touchscreen Controller

1) From the **Home** Screen on the Touchscreen Controller, touch **Direct To**.
2) Touch the **Select Waypoint** Button to display the keypad.
3) Use the keypad to select the waypoint identifier.
4) Touch the **Enter** Button to accept the identifier, and return to the Direct To Screen.
5) Touch the **VNAV Altitude** Button to display the keypad.
6) Use the keypad to select the altitude.
7) Touch the **Enter** Button to accept the altitude, and return to the Direct To Screen.
8) Touch the **VNAV Offset** Button to display the keypad.
9) Touch the **(Before) -** Button or the **(After) +** Button, if necessary.
10) Use the keypad to select the offset distance.
11) Touch the **Enter** Button to accept the offset distance, and return to the Direct To Screen.
12) Touch the **Activate** D▸ Button to activate the direct-to.

Direct-to Navigation from the PFD

1) On the PFD Controller, press the D▸ Button to display the Direct To Window.
2) Turn the large **PFD** Knob to move the cursor to the identifier field, if necessary.
3) Turn the small **PFD** Knob one click to activate the editing cursor (flashing).
4) Turn the large and small **PFD** knobs to select the identifier (large knob moves the cursor; small knob selects the character)
5) Press the **ENT** Key or the small **PFD** Knob to accept the selection.
6) Turn the large **PFD** Knob to move the cursor to the **ALT** field.
7) Turn the small **PFD** Knob one click to activate the editing cursor (flashing).
8) Turn the large and small **PFD** knobs to select the altitude (large knob moves the cursor; small knob selects the character).
9) Press the **ENT** Key or the small **PFD** Knob to accept the selection and move the cursor to the **OFFSET** field.

10) Turn the large and small **PFD** knobs to select the offset distance (large knob moves the cursor; small knob selects the character).

11) Press the **ENT** Key or the small **PFD** Knob to accept the selection and move the cursor to the **CRS** field.

12) Press the **ENT** Key or the small **PFD** Knob to accept the selection and move the cursor to the **ACTIVATE?** field.

13) Press the **ENT** Key or the small **PFD** Knob to activate the direct-to.

Cancelling a Direct To:

1) From the **Home** Screen on the Touchscreen Controller, touch **Direct To**.

2) Touch the **Cancel** D→ Button.

3) Touch the **YES** Button in response to the question "Cancel D→ XXXXXX".

Or:

1) On the PFD Controller, press the D→ Button to display the Direct To Window.

2) Turn the large **PFD** Knob to move the cursor to the CANCEL D→ field.

3) Press the **ENT** Key or the small **PFD** Knob to cancel the direct-to.

ACTIVATE A STORED FLIGHT PLAN

1) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan** > **Flight Plan Options**.

2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.

3) Touch the desired stored flight plan button to display the Catalog Options Window.

4) Touch the **Activate** Button.

5) If necessary, touch the **OK** Button in response to "Activate Selected Flight Plan and Replace Current Active Route?". To cancel the request, touch the **Cancel** Button.

ACTIVATE A FLIGHT PLAN LEG

1) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan**.

2) Scroll the list, if necessary, and touch the waypoint selection button to select the destination waypoint for the desired leg. The Waypoint Options Window is displayed.

3) Touch the **Activate Leg to Waypoint** Button.

4) Touch the **OK** Button in response to "Activate Leg?" The new active flight plan leg is activated. To cancel the request, touch the **Cancel** Button.

STOP NAVIGATING A FLIGHT PLAN

1) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan** > **Flight Plan Options**.

2) Touch the **Delete Flight Plan** Button.

3) Touch the **OK** Button in response to "Delete all waypoints in flight plan?" The active flight plan is deleted. To cancel the request, touch the **Cancel** Button.

VERTICAL NAVIGATION (VNAV)

NOTE: The system supports vertical navigation for all lateral leg types except for CA, CI, FA, FM, HA, HM, PI, VA, VD, VI, VR, and VM. Vertical constraints are not retained in stored flight plans.

The system Vertical Navigation (VNV) feature provides vertical profile guidance during the enroute and terminal phases of flight. Guidance based on specified altitudes at waypoints in the active flight plan or to a direct-to waypoint is provided. It includes vertical path guidance to a descending path, which is provided as a linear deviation from the desired path. The desired path is defined by a line joining two waypoints with specified altitudes or as a vertical angle from a specified waypoint/altitude. The vertical waypoints are integrated into the active flight plan. Both manual and autopilot-coupled guidance are supported.

Altitudes associated with arrival and approach procedures are "auto-designated". This means the system automatically uses the altitudes loaded with the arrival or approach for giving vertical speed and deviation guidance. Note that these altitudes are displayed as blue text up to, but not including, the FAF. The FAF is always a "reference only" altitude and cannot be designated, unless the selected approach does not provide vertical guidance. In this case, the FAF altitude can be designated.

Altitudes that have been designated for use in vertical guidance can be "un-designated". The altitude is now displayed only as a reference. It is not used to give vertical guidance. Other displayed altitudes may change due to re-calculations or be rendered invalid as a result of manually changing an altitude to a non-designated altitude.

Altitude constraints are displayed and entered to the nearest foot mean sea level (MSL) or flight level to the nearest hundred feet. An altitude constraint in feet above ground level (AGL) format is supported for airports. When a database altitude restriction is displayed, the system allows entry of a different altitude when creating a waypoint, effectively overriding the database restriction (only before the FAF). When a database altitude restriction of type "AT or ABOVE" or "AT or BELOW" is activated, the system uses the "AT" portion of the restriction to define the vertical profile.

An altitude constraint is invalid if:

- Meeting the constraint requires the aircraft to climb
- Meeting the constraint requires the maximum flight path angle or maximum vertical speed to be exceeded
- The altitude constraint results in a TOD behind the aircraft present position
- The constraint is within a leg type for which altitude constraints are not supported
- The altitude constraint is added to the FAF of an approach that provides vertical guidance (i.e., ILS or GPS SBAS approach)
- The altitude constraint is added to a waypoint past the FAF.

White Text	Light Blue Text	Light Blue Subdued Text
Altitude calculated by the system estimating the altitude of the aircraft as it passes over the navigation point, or altitude retrieved from the navigation database. The altitude is provided as a reference and is not designated to be used in determining vertical speed and deviation guidance.	Altitude is designated for use in giving vertical speed and deviation guidance. Altitude does not match the published altitude in navigation database or no published altitude exists. The pencil icon indicates manual designation or manual data entry.	The system cannot use this altitude in determining vertical speed and deviation guidance because of an invalid constraint condition.

NOTE: *Making course changes greater than 90° during a descent with vertical guidance may cause excessive and rapid movement of the vertical deviation indicator, and SVS Pathways.*

The system updates vertical path guidance continuously using ground speed and the calculated distance to the Bottom of Descent (BOD). Due to turn anticipation guidance (turn-smoothing), distance to the BOD can be affected by course changes greater than approximately 5 degrees. Ground speed can be affected by factors such as shifts in wind direction, aircraft power management, pitch angle, and course changes. Abrupt and/or substantial changes to either the distance to the BOD, ground speed, or both can cause similarly abrupt/substantial changes in vertical path guidance.

Because of turn-smoothing, changes to both distance to the BOD and ground speed tend to be more extreme when the BOD is also a waypoint that marks a large course change. These speed and distance changes will be accounted for in the computed required vertical path and reflected in the vertical guidance indications.

Cross AT 11,000 ft

Cross AT or ABOVE 13,000 ft

Cross AT or BELOW 23,000 ft

Temperature Compensated Altitude

Unusable/Invalid Altitude

Designating the current waypoint altitude to be used for vertical guidance:

1) From **Home**, touch **Flight Plan**.
2) Scroll the list, if necessary, and touch a VNAV ALT button to display the VNAV Altitude Window.
3) Touch the **Enter** Button to designate the current altitude to be used for vertical guidance. The altitude is now shown in blue, indicating it is usable for vertical guidance.

Selecting and designating a new waypoint altitude to be used for vertical guidance:

1) From **Home**, touch **Flight Plan**.
2) Scroll the list, if necessary, and touch a VNAV ALT button to display the VNAV Altitude Window.
3) If necessary, touch the **Flight Level** Button or the **MSL** Button to choose the altitude entry type.
4) Use the keypad to select a new VNAV altitude and touch the **Enter** Button to designate the new altitude to be used for vertical guidance. The altitude is now shown in blue, indicating it is usable for vertical guidance.

Altitude constraints can be modified or deleted after having been added to the flight plan. In the event an altitude constraint is deleted and the navigation database contains an altitude restriction for the lateral waypoint, the system displays the altitude restriction from the database provided no predicted altitude can be provided. The system also provides a way to reinstate a published altitude constraint that has been edited.

Removing an altitude constraint provided by the navigation database:

1) From **Home**, touch **Flight Plan**.
2) Scroll the list, if necessary, and touch a VNAV ALT button to display the VNAV Altitude Window.
3) Touch the **Remove VNAV ALT** Button. A 'Remove VNAV altitude?' window is displayed.

4) Touch the **OK** Button. The altitude is now shown in white, indicating it is not usable for vertical guidance. To cancel the request, touch the **Cancel** Button.

5) Use the keypad to select a new VNAV altitude and touch the **Enter** Button to designate the new altitude to be used for vertical guidance. The altitude is now shown in blue, indicating it is usable for vertical guidance.

Removing an altitude constraint that has been manually entered:

1) From **Home**, touch **Flight Plan**.

2) Scroll the list, if necessary, and touch a VNAV ALT button to display the VNAV Altitude Window.

3) Touch the **Remove VNAV ALT** Button. A 'Remove VNAV altitude?' window is displayed.

4) Touch the **OK** Button. The altitude is now shown in white, indicating it is not usable for vertical guidance. To cancel the request, touch the **Cancel** Button.

Reverting a manually entered altitude constraint back to the navigation database value:

1) From **Home**, touch **Flight Plan**.

2) Scroll the list, if necessary, and touch a VNAV ALT button to display the VNAV Altitude Window.

3) Touch the **Remove VNAV ALT** Button. A 'Remove or Revert to published VNAV altitude of nnnnnFT?' confirmation window is displayed.

4) Touch the **Revert** Button. The altitude is now the database altitude and is shown in light blue, indicating it is usable for vertical guidance.

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FLIGHT PLANNING

WEIGHT AND FUEL PLANNING

Entering Weight Parameters

1) From **Home**, touch **Utilities > Weight and Fuel.**
2) If necessary, touch the **Operating Weight** Tab.
3) Touch the **Set Empty Weight** Button.
4) Use the keypad to input the Empty Weight.
5) Touch **Enter**
6) Touch the **Payload** Tab
7) Touch the **Passengers** input button
8) Use the keypad to input the number of passengers for the flight.
9) Touch **Enter.**
10) Touch the **Passenger Weight** input button.
11) Use the keypad to input the average weight per passenger.
12) Touch **Enter.**
13) Touch the **Cargo Weight** input button.
14) Use the keypad to input the total cargo weight for the flight
15) Touch **Enter.**
16) Touch the **Fuel** Tab.
17) Touch the **Fuel on Board** input button.
18) Use the keypad to input the total **Fuel on Board**.
19) Touch **Enter.**
20) Touch the **Takeoff** Tab.
21) Touch the **Taxi Fuel** input button.
22) Use the keypad to input the amount of fuel that will be used during taxi.
23) Press **Enter.**
24) Touch the **Landing** Tab.
25) Touch the **Fuel Reserves** input button.
26) Use the keypad to input the **Fuel Reserves**.
27) Touch **Enter**.

TRIP PLANNING

The trip statistics are calculated based on the trip route selected and the trip planning inputs.

Trip Route Mode	Trip Route Button	Description
Stored Flight Plan - Cumulative Mode	Trip Route Stored Flight Plan – Cumulative KMKC → KCOS	Waypoints are the starting and ending waypoints of the selected flight plan.
Stored Flight Plan - Leg Mode	Trip Route Stored Flight Plan – Leg MCI → TIFTO	Waypoints are the endpoints of the selected leg.
Active Flight Plan - Remaining Mode	Trip Route Active Flight Plan – Remaining P.POS → KCOS	The 'from' waypoint is the present position of the aircraft or a selected waypoint, and the 'to' waypoint is the endpoint of the active flight plan.
Active Flight Plan - Leg Mode	Trip Route Active Flight Plan – Leg P.POS → TOP	The 'from' waypoint is the present position of the aircraft or a selected waypoint, and the 'to' waypoint is the endpoint of the selected leg.
Waypoint Mode	Trip Route MCI → TOP	Manually selected waypoints (if there is an active flight plan, these default to the endpoints of the active leg).

Selecting the Stored Flight Plan - Cumulative trip route mode:

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Trip Planning**.
2) Touch the **Trip Route** Button to display the Input Selection Window.
3) Touch the **Select from Flight Plan** Button to display the Select Flight Plan Screen.
4) Scroll the list, if necessary, and touch a stored flight plan button to display the Select Flight Plan Leg Screen.
5) Touch the **Cumulative Flight Plan** Button to select the mode and return to the Trip Planning Screen.

Selecting the Stored Flight Plan - Leg trip route mode:

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Trip Planning**.
2) Touch the **Trip Route** Button to display the Input Selection Window.
3) Touch the **Select from Flight Plan** Button to display the Select Flight Plan Screen.
4) Scroll the list, if necessary, and touch a stored flight plan button to display the Select Flight Plan Leg Screen.
5) Scroll the list, if necessary, and touch a flight plan leg selection button to select the mode and return to the Trip Planning Screen.

Selecting the Active Flight Plan - Remaining trip route mode:

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Trip Planning**.
2) Touch the **Trip Route** Button to display the Input Selection Window.
3) Touch the **Select from Flight Plan** Button to display the Select Flight Plan Screen.
4) Scroll the list, if necessary, and touch the active flight plan button to display the Select Flight Plan Leg Screen.
5) Touch the **Remaining Flight Plan** Button to select the mode and return to the Trip Planning Screen.

Selecting the Active Flight Plan - Leg trip route mode:

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Trip Planning**.
2) Touch the **Trip Route** Button to display the Input Selection Window.
3) Touch the **Select from Flight Plan** Button to display the Select Flight Plan Screen.
4) Scroll the list, if necessary, and touch the active flight plan button to display the Select Flight Plan Leg Screen.
5) Scroll the list, if necessary, and touch a flight plan leg selection button to select the mode and return to the Trip Planning Screen.

Selecting the waypoints trip route mode:

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Trip Planning**.
2) Touch the **Trip Route** Button to display the Input Selection Window.
3) Touch the **Select Starting and Ending Waypoints** Button to display the Select Starting and Ending Locations Window.
4) Touch the starting waypoint button to display the Select Starting Location Window.
5) Touch the **Present Position** Button to use the present position of the aircraft and return to the Select Starting and Ending Locations Window.

   Or:

   Touch the **Waypoint** Button to select a waypoint using the keypad and return to the Select Starting and Ending Locations Window.
6) Touch the ending waypoint button to select a waypoint using the keypad and return to the Select Starting and Ending Locations Window.
7) Touch the **Accept** Button to select the mode and return to the Trip Planning Screen.

Entering manual data for trip statistics calculations:

1) From the **Home** Screen on the Touchscreen Controller, touch **Utilities** > **Trip Planning**.
2) Touch the **Manual Entry** Button to enable the manual entry data field buttons. Note, when the manual entry mode is selected, the other eight trip input data fields must be entered by the pilot, in addition to flight plan and leg selection.
3) Touch an input data field button and use the keypad to select the value.
4) Touch the **Enter** Button to accept the value and return to the Trip Planning Screen.
5) Repeat steps 3 and 4 for each of the data fields.

CREATE A USER WAYPOINT

1) From the **Home** Screen on the Touchscreen Controller, touch **Waypoint Info** > **Create Waypoint.** The current aircraft position is the default location of the new waypoint.
2) Touch the user waypoint name button to display the keypad.
3) Use the keypad and the **Enter** Button to select a user waypoint name (up to six characters).
4) If desired, define the type and location of the waypoint in one of the following ways:
   - **a)** Touch the **Type** Button to display the User Waypoint Type Window.
   - **b)** Touch the **RAD/DIS** Button to select the bearing/distance from a waypoint type.
   - **c)** Touch the **REF** Button to display the keypad.
   - **d)** Use the keypad and the **Enter** Button, or the Find function, to select the waypoint.
   - **e)** Touch the **RAD** Button to display the keypad.
   - **f)** Use the keypad and the **Enter** Button to select the radial.
   - **g)** Touch the **DIS** Button to display the keypad.
   - **h)** Use the keypad and the **Enter** Button to select the distance.

   Or:

a) Touch the **Type** Button to display the User Waypoint Type Window.

b) Touch the **RAD/RAD** Button to select the bearings from two waypoints type.

c) Touch a **REF** Button to display the keypad.

d) Use the keypad and the **Enter** Button, or the Find function, to select the waypoint.

e) Touch the corresponding **RAD** Button to display the keypad.

f) Use the keypad and the **Enter** Button to select the radial.

g) Repeat steps c – f for the other reference waypoint and radial.

Or:

a) Touch the **Type** Button to display the User Waypoint Type Window.

b) Touch the **LAT/LON** Button to select the latitude/longitude type.

c) Touch the **LAT/LON** Button to display the keypad.

d) Use the keypad and the **Enter** Button to select the latitude and longitude.

5) If desired, change the waypoint comment.

a) Touch the **Comment** Button to display the keypad.

b) Use the keypad and the **Enter** Button to select the comment.

6) If desired, touch the **Temporary** Button to change the waypoint storage method. When the annunciator on the button is green, the waypoint is only stored until the next power cycle. When the annunciator is gray, the waypoint is stored until manually erased.

7) Touch the **Create** Button to accept the new user waypoint.

CREATE A FLIGHT PLAN

Creating an active flight plan using the Touchscreen Controller:

1) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan**.

2) Touch the **Add Waypoint** Button to display the keypad.

3) Select the identifier of the departure waypoint. The active flight plan is modified as each waypoint is entered.

Use the keypad and the **Enter** Button to select a waypoint Identifier.

Or:

a) Touch the **Find** Button to display the Find Waypoint Screen.

b) Touch the **Nearest**, **Recent**, **Flight Plan**, or **Favorites** Tab and select the waypoint from the list of waypoints.

Or:

a) Touch the **Find** button to display the Find Waypoint Screen.

b) Touch the **Search** Tab to display the **Search By** Button.

c) If necessary, touch the **Search By** Button to choose Search by City or Search by Facility.

d) Touch the **Facility Name** Button or the **City Name** Button to display the keypad.

e) Use the keypad and the **Enter** Button to accept the entry and display the search results.

f) Touch a waypoint selection button to choose the waypoint.

4) Repeat step numbers 2 and 3 to enter each additional flight plan waypoint.

Creating an active flight plan using the PFD Controller:

1) Press the **FPL** Key.

3) Turn the small **PFD** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).

4) Enter the identifier, facility, or city name of the departure waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key. The active flight plan is modified as each waypoint is entered.

5) Repeat step numbers 3 and 4 to enter each additional flight plan waypoint.

6) When all waypoints have been entered, press the **FPL** Key or the **CLR** Key to remove the Waypoint Information Window.

Creating a stored flight plan:

1) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan** > **Flight Plan Options**.

2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.

3) Touch the **Create New Catalog Flight Plan** Button to display the Edit Stored Flight Plan Screen.

4) Touch the **Add Waypoint** Button to display the keypad.

5) Select the identifier of the departure waypoint. The stored flight plan is modified as each waypoint is entered.

   Use the keypad and the **Enter** Button to select a waypoint Identifier.

   Or:

   a) Touch the Find Button to display the Find Waypoint Screen.

   b) Touch the **Nearest**, **Recent**, **Flight Plan**, or **Favorites** Tab and select the waypoint from the list of waypoints.

   Or:

   a) Touch the **Find** button to display the Find Waypoint Screen.

   b) Touch the **Search** Tab to display the **Search By** Button.

   c) If necessary, touch the **Search By** Button to choose Search by City or Search by Facility.

   d) Touch the **Facility Name** Button or the **City Name** Button to display the keypad.

   e) Use the keypad and the **Enter** Button to accept the entry and display the search results.

   f) Touch a waypoint selection button to choose the waypoint.

6) Repeat step numbers 4 and 5 to enter each additional flight plan waypoint.

IMPORT A FLIGHT PLAN FROM AN SD CARD

NOTE: *If the imported flight plan contains a waypoint with a name that duplicates the name of a waypoint already stored on the system, the system compares the coordinates of the imported waypoint with those of the existing waypoint. If the coordinates are different, the imported waypoint is automatically renamed by adding characters to the end of the name.*

1) Insert the SD card containing the flight plan in the top card slot on the MFD.

2) From **Home**, touch **Flight Plan** > **Flight Plan Options** > **Catalog** > **Create New Catalog Flight Plan** > **Flight Plan Options**.

3) Touch the **Import** Button to display the Import Flight Plan Screen.

4) Touch a flight plan selection button to display the flight plan information and activate the **Import** Button.
5) Touch the **Import** Button.
6) Touch the **OK** Button to return to the Edit Stored Flight Plan Screen.

INSERT A WAYPOINT IN THE ACTIVE FLIGHT PLAN

1) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan**.
2) Touch a waypoint options button to display the Waypoint Options Window.
3) Touch the **Insert Before** Button or the **Insert After** Button to select where the new waypoint will be placed in relation to the selected waypoint. The keypad is displayed.
4) Use the keypad, right knob, or the Find function to select the new waypoint.
5) Touch the **Enter** Button to accept the waypoint and place it in the flight plan.

Or:

1) Press the **FPL** Key on the PFD Controller.
2) Select the point in the flight plan before which to add the new waypoint. The new waypoint is placed directly in front of the highlighted waypoint.
3) Turn the small **FMS** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
4) Enter the identifier, facility, or city name of the waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key. The active flight plan is modified as each waypoint is entered.

ENTER AN AIRWAY IN AN ACTIVE FLIGHT PLAN

1) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan**.
2) Scroll the list if necessary and touch a waypoint selection button to display the Waypoint Options Window.
3) Touch the **Load Airway** Button to display the Airway Selection Screen.
4) Scroll the list if necessary and touch an airway selection button to select the airway and display the Select Exit Window.

5) Scroll the list if necessary and touch an airway exit point selection button to select the airway exit point and display the Airway Waypoint Sequence.

6) Touch the **Load Airway** Button to insert the airway into the active flight plan. Enter an Airway in an Active Flight Plan.

ACTIVATING PARALLEL TRACK

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options** > **Parallel Track**.
2) Touch the **Left** Button or the **Right** Button to choose the offset direction.
3) Touch the **Offset Distance** Button to display the keypad.
4) Use the keypad to select the distance.
5) Touch the **Enter** Button to accept the distance, and return to the Parallel Track Screen.
6) Touch the **Activate Parallel Track** Button to activate the parallel track function.

USER-DEFINED HOLDING PATTERNS

Creating a user-defined hold at an active flight plan waypoint:

1) From the **Home** Screen, touch **Flight Plan**.
2) Scroll the list, if necessary, touch the waypoint at which to define the holding pattern. The Waypoint Options Window is displayed.
3) Touch the **Hold at Waypoint** Button. The Hold at Waypoint Window is displayed.
4) Touch the **Turn** Button, choose between **Right** or **Left** turn direction.
5) Touch the Course Direction Button, and touch the **Inbound** Button or the **Outbound** Button to select the course direction.
6) Touch the Hold Entry Course Button to display the keypad. Use the keypad and the **Enter** Button to select the entry angle.
7) Touch the Leg Length Mode Button, and touch the **Distance** Button or the **Time** Button to select the length mode.
8) Touch the **Leg Time** Button or the **Leg Distance** Button to display the keypad. Use the keypad and the **Enter** Button to select the length of the leg.

9) Touch the **Expect Further Clearance** Button to display the keypad. Use the keypad and the **Enter** Button to select the time for a reminder.

10) Touch the **Create** Button to add the hold into the flight plan.

Creating a user-defined hold at the aircraft present position:

1) From the **Home** Screen, touch **Flight Plan > Flight Plan Options**

2) Touch the **Hold at P.POS** Button. The Hold at Waypoint Window is displayed.

3) Touch the Turn Direction Button, and touch the **Right** Button or the **Left** Button to select the turn direction.

4) Touch the Course Direction Button, and touch the **Inbound** Button or the **Outbound** Button to select the course direction.

5) Touch the Hold Entry Course Button to display the keypad. Use the keypad and the **Enter** Button to select the entry angle.

6) Touch the Leg Length Mode Button, and touch the **Distance** Button or the **Time** Button to select the length mode.

7) Touch the **Leg Time** Button or the **Leg Distance** Button to display the keypad. Use the keypad and the **Enter** Button to select the length of the leg.

8) Touch the **Expect Further Clearance** Button to display the keypad. Use the keypad and the **Enter** Button to select the time for a reminder.

9) Touch the **Create** Button to add the hold into the flight plan.

Creating a user-defined hold at a Direct To waypoint:

1) From the **Home** Screen, touch **Direct To**.

2) Touch the Hold Button.

3) Touch the Turn Direction Button, and touch the **Right** Button or the **Left** Button to select the turn direction.

4) Touch the Course Direction Button, and touch the **Inbound** Button or the **Outbound** Button to select the course direction.

5) Touch the Hold Entry Course Button to display the keypad. Use the keypad and the **Enter** Button to select the entry angle.

6) Touch the Leg Length Mode Button, and touch the **Distance** Button or the **Time** Button to select the length mode.

7) Touch the **Leg Time** Button or the **Leg Distance** Button to display the keypad. Use the keypad and the **Enter** Button to select the length of the leg.
8) Touch the **Expect Further Clearance** Button to display the keypad. Use the keypad and the **Enter** Button to select the time for a reminder.
9) Touch the **Create** Button to add the hold into the flight plan.

Removing a user-defined hold at an active flight plan waypoint:

1) From the **Home** Screen, touch **Flight Plan**
2) Scroll the list, if necessary, and touch the hold waypoint selection button. The Waypoint Options Window is displayed.
3) Touch the **Remove Hold** Button.
4) Touch the **OK** Button in response to "Remove Holding Pattern?" The holding pattern is removed. To cancel the request, touch the **Cancel** Button.

Removing a user-defined hold at the aircraft present position:

1) From the **Home** Screen, touch **Flight Plan**
2) Scroll the list, if necessary, and touch the **PPOS-H** waypoint selection button. The Direct To Window is displayed.
3) Touch the **Cancel D-> PPOS-H** Button.
4) Touch the **OK** Button in response to "Cancel D-> PPOS-H?" The holding pattern is removed. To cancel the request, touch the **Cancel** Button.

INVERT AN ACTIVE FLIGHT PLAN

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Invert** Button
3) Touch the **Yes** Button in response to "Invert active flight plan?" The active flight plan is inverted. To cancel the request, touch the **No** Button.

STORE A FLIGHT PLAN

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Store** Button.
3) Touch the **OK** Button in response to the question "Store XXXX/XXXX into catalog?".

INSERT A WAYPOINT IN A STORED FLIGHT PLAN

1) From the **Home** Screen, touch **Flight Plan > Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Touch a flight plan selection button to display the Catalog Options Window.
4) Touch the **Edit** Button to display the Edit Stored Flight Plan Screen.
5) Touch a waypoint options button to display the Waypoint Options Window.
6) Touch the **Insert Before** Button or the **Insert After** Button to select where the new waypoint will be placed in relation to the selected waypoint. The keypad is displayed.
7) Use the keypad, right knob, or the Find function to select the new waypoint.
8) Touch the **Enter** Button to accept the waypoint and place it in the flight plan.

Or:

1) From the **Home** Screen, touch **Flight Plan > Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Touch a flight plan selection button to display the Catalog Options Window.
4) Touch the **Edit** Button to display the Edit Stored Flight Plan Screen.
5) Scroll to the end of the list, if necessary to show the **Add Waypoint** Button.
6) Touch the **Add Waypoint** Button to display the keypad is displayed.
7) Use the keypad, right knob, or the Find function to select the new waypoint.
8) Touch the **Enter** Button to accept the waypoint and place it in the flight plan.

ENTER AN AIRWAY IN A STORED FLIGHT PLAN

1) From the **Home** Screen, touch **Flight Plan > Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Touch a flight plan selection button to display the Catalog Options Window.
4) Touch the **Edit** Button to display the Edit Stored Flight Plan Screen.
5) Scroll the list if necessary and touch a waypoint selection button to display the Waypoint Options Window.

6) Touch the **Load Airway** Button to display the Airway Selection Screen.

7) Scroll the list if necessary and touch an airway selection button to select the airway and display the Select Exit Window.

8) Scroll the list if necessary and touch an airway exit point selection button to select the airway exit point and display the Airway Waypoint Sequence.

9) Touch the **Load Airway** Button to insert the airway into the stored flight plan.

REMOVING FLIGHT PLAN ITEMS

Some waypoints in the final approach segment (such as the FAF or MAP) can not be removed individually. Attempting to remove a waypoint that is not allowed results in a window displaying 'Invalid flight plan modification.'

Removing a waypoint from the active flight plan:

1) From the **Home** Screen, touch **Flight Plan**.

2) Scroll the list if necessary and touch a waypoint selection button to display the Waypoint Options Window.

3) Touch the **Remove Waypoint** Button.

4) Touch the **Yes** Button in response to "Remove <waypoint name>?" The waypoint is removed. To cancel the request, touch the **No** Button.

Removing a waypoint from the active flight plan using the PFD Controller:

1) Press the **FPL** Key to display the Flight Plan Window (PFD).

2) Turn the large **PFD** Key to highlight the waypoint.

3) Press the **CLR** Key. The 'Remove <waypoint name>?' window is displayed.

4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

Removing an airway from the active flight plan:

1) From the **Home** Screen, touch **Flight Plan**.

2) Scroll the list if necessary and touch an airway selection button to display the Airway Options Window.

3) Touch the **Remove Airway** Button.

4) Touch the **Yes** Button in response to "Remove Airway -<airway name> from flight plan?" The airway is removed, but the starting and ending waypoints remain in the flight plan. To cancel the request, touch the **No** Button.

Removing an airway from the active flight plan using the PFD Controller:

1) Press the **FPL** Key to display the Flight Plan Window (PFD).

2) Turn the large **PFD** Knob to highlight the airway header.

3) Press the **CLR** Key. The 'Remove <airway name> from flight plan?' window is displayed.

4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

Removing a procedure from the active flight plan:

1) From the **Home** Screen, touch **Flight Plan**.

2) Scroll the list if necessary and touch a departure, arrival, or approach selection button to display the Departure, Arrival, or Approach Options Window.

3) Touch the **Remove Departure** Button, the **Remove Arrival** Button, or the **Remove Approach** Button.

4) Touch the **Yes** Button in response to "Remove <procedure> -<procedure name> from flight plan?" The procedure is removed (the departure airport remains when removing a departure). To cancel the request, touch the **No** Button.

Removing a procedure from the active flight plan using the PFD Controller:

1) Press the **FPL** Key to display the Flight Plan Window (PFD).

2) Turn the large **PFD** Key to highlight the procedure header.

3) Press the **CLR** Key. The 'Remove <procedure name> from flight plan?' window is displayed.

4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

Removing a waypoint from a stored flight plan:

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Scroll the list if necessary and touch a flight plan options button to display the Catalog Options Window.
4) Touch the **Edit** Button.
5) Scroll the list if necessary and touch a waypoint selection button to display the Waypoint Options Window.
6) Touch the **Remove Waypoint** Button.
7) Touch the **Yes** Button in response to "Remove <waypoint name>?" The waypoint is removed. To cancel the request, touch the **No** Button.

Removing an airway from a stored flight plan:

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Scroll the list if necessary and touch a flight plan options button to display the Catalog Options Window.
4) Touch the **Edit** Button.
5) Scroll the list if necessary and touch an airway selection button to display the Airway Options Window.
6) Touch the **Remove Airway** Button.
7) Touch the **Yes** Button in response to "Remove <airway name>?" The airway is removed, but the starting and ending waypoints remain in the flight plan. To cancel the request, touch the **No** Button.

Removing a procedure from a stored flight plan:

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Scroll the list if necessary and touch a flight plan options button to display the Catalog Options Window.
4) Touch the **Edit** Button.
5) Scroll the list if necessary and touch a departure, arrival, or approach selection button to display the Departure, Arrival, or Approach Options Window.

6) Touch the **Remove Departure** Button, the **Remove Arrival** Button, or the **Remove Approach** Button.

7) Touch the **Yes** Button in response to "Remove <procedure> -<procedure name> from flight plan?" The procedure is removed (the departure airport remains when removing a departure). To cancel the request, touch the **No** Button.

INVERT AND ACTIVATE A STORED FLIGHT PLAN

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Scroll the list if necessary and touch a flight plan selection button to display the Catalog Options Window.
4) Touch the **Invert and Activate** Button.
5) Touch the **OK** Button in response to "Invert and Activate Selected Flight Plan and Replace Current Active Route?" The stored flight is inverted and becomes the active flight plan. The stored flight plan is not modified. To cancel the request, touch the **Cancel** Button.

COPY A STORED FLIGHT PLAN

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Touch a stored flight plan button to display the Catalog Options Window.
4) Touch the **Copy** Button.
5) Touch the **OK** Button in response to "Copy Flight Plan <flight plan name>?" The copied flight plan is placed at the end of the list of stored flight plans. To cancel the request, touch the **Cancel** Button.

DELETE A STORED FLIGHT PLAN

1) From the **Home** Screen, touch **Flight Plan** > **Flight Plan Options**.
2) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
3) Touch a stored flight plan button to display the Catalog Options Window.

4) Touch the **Delete** Button.

5) Touch the **OK** Button in response to "Delete Flight Plan <flight plan name>?". The flight plan is deleted, and any flight plans following it in the list are shifted up. To cancel the request, touch the **Cancel** Button.

EXPORT A FLIGHT PLAN TO AN SD CARD

NOTE: *The exported flight plan will not contain any procedures or airways.*

Exporting the Active Flight Plan to an SD Card:

1) Insert the SD card for storing the flight plan in the top card slot on the MFD.
2) From the **Home** Screen on the Touchscreen Controller, touch **Flight Plan > Flight Plan Options**.
3) Touch the **Export Flight Plan** Button to display the Flight Plan Export Screen.
4) Touch the **File Name:** Button to rename the exported flight plan using the keypad or right knob, if necessary.
5) Touch the **Export** Button.
6) Touch the **OK** Button in response to the "Flight Plan Successfully Exported." prompt to return to the Flight Plan Options Screen.

Exporting a stored Flight Plan to an SD Card

1) Insert the SD card for storing the flight plan in the top card slot on the MFD.
2) From **Home**, touch **Flight Plan > Flight Plan Options**
3) Touch the **Catalog** Button to display the Flight Plan Catalog Screen.
4) Touch a flight plan selection button to display the Catalog Options Window.
5) Touch the **Export** Button to display the Export Flight Plan Screen.
6) Touch the **File Name:** Button to rename the exported flight plan using the keypad or right knob, if necessary.
7) Touch the **Export** Button.
8) Touch the **OK** Button in response to the "Flight Plan Successfully Exported." prompt to return to the Flight Plan Options Screen.

PROCEDURES

LOAD AND ACTIVATE A DEPARTURE PROCEDURE

Loading a departure into the active flight plan using the Touchscreen Controller:

1) From the **Home** Screen, touch the **PROC** Button.
2) Touch the **Departure** Button to display the Departure Selection Screen.
3) If necessary, touch the **Airport** Button to display the keypad and use it to select the departure airport.
4) Touch the **Enter** Button to accept the departure airport.
5) If necessary, touch the **Departure** Button to display the Select Departure Screen with a list of available departures.
6) Scroll the list if necessary and touch a departure selection button to select the departure.
7) If necessary, touch the **Transition** Button to display the Select Transition Screen with a list of available transitions.
8) Scroll the list if necessary and touch a transition selection button to select the transition.
9) If necessary, touch the **Runway** Button to display the Select Runway Screen with a list of available runways.
10) Scroll the list if necessary and touch a runway selection button to select the runway and return to the Departure Selection Screen.
11) Touch the **Load** Button to insert the departure into the active flight plan.

Loading a departure into the active flight plan using the PFD Controller:

1) Press the **PROC** Key. The Procedures Window is displayed.
2) Highlight 'SELECT DEPARTURE'.
3) Press the **ENT** Key or the small **PFD** Knob. The Select Departure Window is displayed.
4) Use the **PFD** Knob to select an airport and press the **ENT** Key or the small **PFD** Knob.

5) Select a departure from the list and press the **ENT** Key or the small **PFD** Knob.
6) Select a runway (if required) and press the **ENT** Key or the small **PFD** Knob.
7) Select a transition (if required) and press the **ENT** Key or the small **PFD** Knob. 'LOAD?' is highlighted.
8) Press the **ENT** Key or the small **PFD** Knob to load the departure procedure.

LOAD AN ARRIVAL PROCEDURE

Loading an arrival into the active flight plan using the Touchscreen Controller:

1) From the **Home** Screen, touch the **PROC** Button.
2) Touch the **Arrival** Button to display the Arrival Selection Screen.
3) If necessary, touch the **Airport** Button to display the keypad and use it to select the arrival airport.
4) Touch the **Enter** Button to accept the arrival airport.
5) If necessary, touch the **Arrival** Button to display the Select Arrival Screen with a list of available arrivals.
6) Scroll the list if necessary and touch an arrival selection button to select the arrival.
7) If necessary, touch the **Transition** Button to display the Select Transition Screen with a list of available transitions.
8) Scroll the list if necessary and touch a transition selection button to select the transition.
9) If necessary, touch the **Runway** Button to display the Select Runway Screen with a list of available runways.
10) Scroll the list if necessary and touch a runway selection button to select the runway and return to the Arrival Selection Screen.
11) Touch the **Load** Button to insert the arrival into the active flight plan.

Loading an arrival into the active flight plan using the PFD Controller:

1) Press the **PROC** Key. The Procedures Window is displayed.
2) Highlight 'SELECT ARRIVAL'.

3) Press the **ENT** Key or the small **PFD** Knob. The Select Arrival Window is displayed.
4) Use the **PFD** Knob to select an airport and press the **ENT** Key or the small **PFD** Knob.
5) Select an arrival from the list and press the **ENT** Key or the small **PFD** Knob.
6) Select a runway (if required) and press the **ENT** Key or the small **PFD** Knob.
7) Select a transition (if required) and press the **ENT** Key or the small **PFD** Knob. 'LOAD?' is highlighted.

LOAD AND/OR ACTIVATE AN APPROACH PROCEDURE

NOTE: *If certain GPS parameters (SBAS, RAIM, etc.) are not available, some published approach procedures for the desired airport may not be displayed in the list of available approaches.*

Loading an approach into the active flight plan using the Touchscreen Controller:

1) From the **Home** Screen, touch **PROC**
2) Touch the **Approach** Button to display the Approach Selection Screen.
3) If necessary, touch the **Airport** Button to display the keypad and use it to select the approach airport.
4) Touch the **Enter** Button to accept the approach airport.
5) If necessary, touch the **Approach** Button to display the Select Approach Screen with a list of available approaches.
6) Scroll the list if necessary and touch an approach selection button to select the approach.
7) If necessary, touch the **Transition** Button to display the Select Transition Screen with a list of available transitions.
8) Scroll the list if necessary and touch a transition selection button to select the transition.
9) To set the minimums, touch the **Minimums** Button to display the Minimums Screen. If the minimums were Off, then Baro is automatically selected.

a) If Baro is desired, use the keypad to select the barometric minimum altitude.

b) Touch the **Enter** Button to accept the barometric minimum altitude and return to the Approach Selection Screen.

Or:

a) If temperature compensated minimum is desired, touch the **Minimums** Button to display the Minimums Source Window.

b) Touch the **Temp Comp** Button to select temperature compensated minimums and return to the Minimums Screen.

c) Use the numeric keypad to select the destination temperature.

d) Touch the **Enter** Button to accept the destination temperature and return to the Minimums Screen.

e) Use the keypad to select the minimums altitude.

f) Touch the **Enter** Button to accept the temperature compensated minimums and return to the Approach Selection Screen.

10) Touch the **Preview** Button, then the **Show on Map** Button to show the preview of the approach.

11) Touch the **Load** Button to insert the approach into the stored flight plan.

NOTE: *When GPS is not approved for the selected final approach course, the message 'NOT APPROVED FOR GPS' is displayed. GPS provides guidance to the approach, but the HSI must to be switched to a NAV receiver to fly the final course of the approach.*

Loading an approach into the active flight plan using the PFD Controller:

1) Press the **PROC** Key. The Procedures Window is displayed.

2) Highlight 'SELECT APPROACH'.

3) Press the **ENT** Key or the small **PFD** Knob. The Select Approach Window is displayed.

4) Use the **PFD** Knob to select an airport and press the **ENT** Key or the small **PFD** Knob.

5) Select an approach from the list and press the **ENT** Key or the small **PFD** Knob.

6) Select a transition (if required) and press the **ENT** Key or the small **PFD** Knob.

7) To set the minimums,:

   a) Use the small **PFD** Knob to select "BARO" (if required) and press the **ENT** Key or the small **PFD** Knob.

   b) Use the **PFD** Knob to select the barometric minimum altitude.

   c) Press the **ENT** Key or the small **PFD** Knob to accept the barometric minimum altitude.

   Or:

   a) Use the small **PFD** Knob to select "TEMP COMP" and press the **ENT** Key or the small **PFD** Knob.

   b) Use the **PFD** Knob to select the barometric minimum altitude.

   c) Press the **ENT** Key or the small **PFD** Knob to accept the barometric minimum altitude.

   d) Use the **PFD** Knob to select the temperature.

   e) Press the **ENT** Key or the small **PFD** Knob to accept the compensation temperature. 'LOAD?' is highlighted.

8) Press the **ENT** Key or the small **PFD** Knob to load the approach procedure.

ACTIVATE AN APPROACH IN THE ACTIVE FLIGHT PLAN

Activating a loaded approach using the Touchscreen Controller:

1) From the **Home** Screen, touch the **PROC** Button.
2) Touch the **Activate Approach** Button to activate the approach.

Activating a loaded approach using the PFD Controller:

1) Press the **PROC** Key. The Procedures Window is displayed.
2) Highlight 'ACTIVATE APPROACH'.
3) Press the **ENT** Key or the small **PFD** Knob. The approach is activated.

ACTIVATE A VECTOR TO FINAL APPROACH FIX

Activating a loaded approach with vectors to final using the Touchscreen Controller:

1) From the **Home** Screen, touch the **PROC** Button.
2) Touch the **Activate Vectors To Final** Button to activate vectors to final.

Activating a loaded approach with vectors to final using the PFD Controller:

1) Press the **PROC** Key. The Procedures Window is displayed.
2) Highlight 'ACTIVATE VECTOR-TO-FINAL'.
3) Press the **ENT** Key or the small **PFD** Knob. Vector to final is activated.

ACTIVATE A MISSED APPROACH IN THE ACTIVE FLIGHT PLAN

Activating a missed approach using the Touchscreen Controller:

1) From the **Home** Screen, touch the **PROC** Button.
2) Touch the **Activate Missed Approach** Button. The approach automatically sequences to the MAHP.

   Or:

   Press the Go-Around Button.

Activating a missed approach using the PFD Controller:

1) Press the **PROC** Key.
2) Turn the **FMS** Knob to highlight 'ACTIVATE MISSED APPROACH'.
3) Press the **ENT** Key. The approach automatically sequences to the MAHP.

   Or:

   Press the Go-Around Button.

TEMPERATURE COMPENSATED ALTITUDE

A temperature compensated altitude can be computed and used at the FAF of a loaded approach. A temperature compensated altitude is displayed with a snowflake ( ) icon.

Enabling temperature compensated altitude:

1) From the **Home** Screen, touch **Flight Plan > Flight Plan Options.**
2) Touch the **Temp Compensation** Button to display the Temp Compensation Screen.
3) Touch the **Temp Compensation** Annunciator Button to enable/disable temperature compensation.
4) Touch the **<airport> Temp** Button to display the numeric keypad. Use the keypad and the **Enter** Button to select the temperature at the <airport>. The compensated altitude is computed and shown in the flight plan.

Blank Page

HAZARD AVOIDANCE

CUSTOMIZING THE HAZARD DISPLAYS ON THE NAVIGATION MAP

Selecting a weather data link source for navigation maps:

1) From the **Home** Screen, touch **Map > Map Settings**.
2) If necessary, touch the Sensor Tab.
3) Scroll to and touch the **WX Source** Button (current weather source displayed in light blue).
4) Touch the desired weather data source button (such as **Sirius XM** or **Connext**).

Setting up and customizing the Weather Products on Map Displays:

1) From the **Home** Screen, touch **Map > Map Settings**.
2) If necessary, touch the **Sensor** Tab.
3) Scroll through the list to view the available weather products.
4) Touch a weather product annunciator button to enable/disable the selected weather product. Button annunciator is green when a weather product is enabled, or gray when disabled.
5) If necessary, touch a range button next to the corresponding weather product, then touch to select the maximum map range at which the system will display the selected weather product.

Selecting a terrain display range on the navigation map:

1) From the **Home** Screen, touch **Map** > **Map Settings**.
2) If necessary, touch the **Sensor** Tab.
3) Touch the **Relative Terrain** Button to enable/disable the Relative Terrain. Relative Terrain is enabled when the button annunciator is green, disabled when gray.
4) Touch the **Settings** Button to display the Relative Terrain Settings. Then touch the **Map Settings** button to display the Map Terrain Range Setting.
5) Touch on the **Terrain** Button, scroll though the list and touch a range button to select the maximum map range at which the system shows terrain data.

Selecting an obstacle display range on the navigation map:

1) From the **Home** Screen, touch **Map > Map Settings.**
2) If necessary, touch the **Land** Tab.
3) Touch the **Obstacle Data** Button to enable/disable the Obstacle Data. Obstacle Data is enabled when the button annunciator is green, disabled when gray.
4) Touch the current range button (10 NM is selected by default) to display the Map Obstacle Range.
5) Scroll through the list and touch a range button to select the maximum map range at which the system shows obstacle data.

Customizing the traffic display on the navigation map:

1) From the **Home** Screen, touch **Map > Map Settings.**
2) If necessary, touch the **Sensor** Tab.
3) Touch the **Traffic** Button to enable/disable the display of traffic. Traffic is enabled when the button annunciator is green, disabled when gray.
4) Touch the Traffic Settings Button to select which traffic symbols are to be shown:

Mode

- **TA/RA** Button - Displays Traffic Advisories and Resolution Advisories
- **TA Only** Button - Displays only Traffic Advisories.
- **Standby** Button - No traffic is displayed on the navigation map.

Altitude Range

- **Unrestricted:** All traffic is displayed from 9900 feet above and 9900 feet below the aircraft.
- **Above:** Displays non-threat and proximity traffic from 9000 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight.
- **Normal:** Displays non-threat and proximity traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight
- **Below**: Displays non-threat and proximity traffic from 2700 feet above the aircraft to 9000 feet below the aircraft. Typically used during descent phase of flight.

4) Touch the **Map Settings** Button to display the **Symbols** range button and scroll to select the maximum map range at which traffic symbols are shown.

5) Touch the **Traffic Labels** Button to enable/disable the display of traffic labels. Traffic labels are enabled when the button annunciator is green, disabled when gray.

6) Touch the Traffic Label range button and scroll to select the maximum map range at which traffic labels are shown.

LIGHTNING DETECTION SYSTEM (OPTIONAL)

WARNING: *Do not rely on information from the lightning detection system display as the sole basis for hazard weather avoidance. Range limitations and interference may cause the system to display inaccurate or incomplete information. Refer to the documentation from the lightning detection system manufacturer for detailed information about the system.*

NOTE: *Lightning Detection System information cannot be displayed simultaneously with data link lightning weather products on the same map.*

NOTE: *Refer to the documentation from the manufacturer of the on-board lightning detection system for detailed information about the system, its capabilities, and limitations.*

Viewing Stormscope Lightning on the Navigation Map Page:

1) From the **Home** Screen, touch **Map > Map Settings**.

2) Touch the **Sensor** Tab.

3) If necessary, scroll to display the **Stormscope Lightning** Button.

4) Touch the **Stormscope Lightning** Button to enable or disable Stormscope on the Navigation Map. A green annunciator indicates Stormscope is enabled. A gray annunciator indicates Stormscope is disabled.

Lightning Age	Symbol
Strike is less than 6 seconds old	
Strike is between 6 and 60 seconds old	
Strike is between 1 and 2 minutes old	
Strike is between 2 and 3 minutes old	

Selecting 'Cell' or 'Strike' as the Stormscope Operating Mode:

NOTE: "Cell mode" uses a clustering program to identify clusters of electrical activity that indicate cells.

1) From the **Home** Screen, touch **Weather > Weather Selection > Stormscope Settings**.
2) Touch the **Cell** or **Strike** Button to select the desired operating mode. A green annunciator indicates the active operating mode.

Or:

1) From the **Home** Screen on the Touchscreen Controller, touch **Map > Map Settings**.
2) Touch the **Sensor** Tab.
3) If necessary, scroll to display the **Stormscope Lightning** Button.
4) Touch the **Settings** Button.
5) Touch the **Cell** or **Strike** Button to select the desired operating mode. A green annunciator indicates the active operating mode.

Clear Stormscope Data from the Display

1) From the **Home** Screen, touch **Weather > Weather Selection > Stormscope Settings**.
2) Touch the **Clear Stormscope Lightning** Button to remove lightning indications on the display.

Or:

1) From the **Home** Screen, touch **Map > Map Settings**.
2) Touch the **Sensor** Tab.
3) If necessary, scroll to display the **Stormscope Lightning** Button.

4) Touch the **Settings** Button.
5) Touch the **Clear Stormscope Lightning** Button to remove lightning indications on the display.

SIRIUSXM WEATHER (OPTIONAL)

WARNING: *Do not use data link weather information for maneuvering in, near or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

WARNING: *Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.*

Displaying SiriusXM Weather on the navigation map:

1) From the **Home** Screen, touch **Map > Map Settings**.
2) If necessary, touch the **Sensor** Tab.
3) Touch the desired weather product button to enable or disable weather product data.
4) Touch the weather product Data Range Button to display the map range window.
5) Scroll though the list and touch a range button to select the maximum map range at which the system shows data for the selected weather product.

Displaying SiriusXM Weather data on the Weather Data Link Display:

1) From the **Home** Screen, touch **Weather** > **Weather Selection > SiriusXM Settings.**
2) Touch the appropriate Background or Overlay Button. The button annunciator is green when the weather product is enabled, gray when disabled.
3) Display ranges can be set for weather products that are overlays. Touch the weather product Data Range Button to display the map range window.
4) Scroll though the list and touch a range button to select the maximum map range at which the system shows data for the selected weather product.

SiriusXM Weather Products and Symbols

Weather Product	Symbol	Expiration Time (Minutes)	Refresh Rate (Minutes)
Next-generation Radar (NEXRAD)		30	5 (U.S.) 10 (Canada)
Cloud Top		60	15
Echo Top		30	7.5
SiriusXM Lightning		30	5
Cell Movement		30	12
SIGMETs/AIRMETs		60	12
Meteorological Aerodrome Report (METARS)		90	12
City Forecast		60	12
Surface Analysis		60	12
Freezing Levels		60	12
Winds Aloft		60	12
County Warnings		60	5
Cyclone Warnings		60	12
Icing Potential (CIP and SLD)		90	22

Weather Product	Symbol	Expiration Time (Minutes)	Refresh Rate (Minutes)
Pilot Weather Report (PIREPs)		90	12
Air Report (AIREPs)		90	12
Turbulence		180	12
Radar Coverage	no product image	30	5
Temporary Flight Restrictions	no product image	60	12
Terminal Aerodrome Reports	no product image	60	12

GARMIN CONNEXT™ WEATHER (OPTIONAL)

NOTE: *The availability of specific Connext Weather products varies by region and by subscription type. For Connext Weather product coverage information, refer to fly.garmin.com/fly-garmin/gfds-weather.*

Registering the system to receive Connext Weather:

1) Ensure the aircraft is outside and has a clear view of the sky.
2) From **Home**, touch **Utilities > Setup > Connext Registration**. If the Registration Information window indicates 'NOT REGISTERED', continue with this procedure.
3) Touch the **Register** Button.
4) Using the Touchscreen Controller Screen or Large and Small Right Knobs, enter the access code provided by Garmin Flight Data Services.
5) Touch the **Enter** button or press the Right Knob. The system will contact Garmin Flight Data Services. Registration is complete when the Registration Information window displays the name of the airframe, tail number, and the serial numbers for the airframe and Iridium unit.

Weather Product	Symbol	Expiration Time (Minutes)	Refresh Rate (Minutes)
Radar Precipitation (PRECIP)		30	U.S./Canada: 3* Europe: 15
Infrared Satellite (IR SAT)		60	30
Data Link Lightning (DL LTNG)		30	Continuous
SIGMETs/AIRMETs (SIG/AIR)		60	Continuous
Meteorological Aerodrome Report (METARs)		90	Continuous
Winds Aloft (WIND)		90	Continuous
Pilot Weather Report (PIREPs)		90	Continuous
Temporary Flight Restrictions (TFRs)	no product image	60	Continuous
Terminal Aerodrome Reports (TAFs)	no product image	60	Continuous

** The composite precipitation image is updated every 3 minutes, but individual radar sites may take between 3 and 10 minutes to provide new data.*

Viewing the Connext Weather Pane:

1) From the **Home** Screen, touch the **Weather** Button. The button is highlighted and becomes the **Weather Selection** Button. The selected Display Pane shows a weather display. If a weather display other than 'Connext Weather' is shown (such as SiriusXM or Weather Radar), continue with the procedure to change the selected weather data source.
2) Touch the **Weather Selection** Button.
3) Touch the **Connext Weather** Button. Button is highlighted and becomes **Connext Settings** Button. The selected Display Pane shows Connext Weather Display.

Defining Weather Data Request Coverage Area:

1) From the **Home** Screen, touch **Weather > Weather Selection > Connext Weather > Connext Settings**.
2) Touch the **Define Coverage** Button.
3) To change the diameter and route width of the weather data request coverage area, touch the **Diameter/Width** Button. Scroll as needed and touch the desired distance button in the popup window.
4) To include/remove the present position in the weather data request, touch the **P. POS** Button to enable/disable.
5) To include/remove any portion of the flight plan route in the weather data request, touch the **Flight Plan** Button.
6) To change distance of the flight plan to be used in the weather data request, touch the Flight Plan Distance Button. Scroll as needed and touch the desired distance of the flight plan to be used ('Remaining FPL' uses the remainder of the flight plan, or select a specified look-ahead distance from the list.)
7) To include/remove a specific waypoint to be used in the weather data request, touch the **Waypoint** Button.
   a) Touch the waypoint entry Button (to the right of the **Waypoint** Button.)
   b) Using the Touchscreen Controller buttons or knobs, enter the desired waypoint to include in the weather data request. Note the waypoint may be off-route.

Issuing/Cancelling an Immediate Weather Data Request:

1) From the **Home** Screen, touch **Weather > Weather Selection > Connext Weather > Connext Settings**.
2) Touch the **Send Immediate Request** Button. The system contacts Garmin Flight Data Services and displays the status in the Data Request Window. System displays 'Completed' when finished.
3) If desired, touch the **Cancel Immediate Reques**t Button while a request is occurring. Data Request window will display 'Request Cancelled'.

Enabling/disabling automatic Connext Data Requests:

1) From the **Home** Screen, touch **Weather > Weather Selection > Connext Weather > Connext Settings**.
2) Touch the **Auto Request** Button.
3) From the pop-up window, touch an Auto Update Request Rate Button to select the desired weather request update interval (5 Min, 10 Min, 15 Min, 20 Min, 30 Min, 45 Min, or 60 Min) or touch the **Off** Button to disable automatic weather data requests..

Displaying Connext information (navigation map displays)

1) From the **Home** Screen, touch **Map** > **Map Settings**.
2) If necessary touch the **Sensor** Tab
3) If necessary scroll to and touch the **WX Source** > **Connext**.
4) Scroll as needed and touch the desired weather product button in the Overlays window. The weather product is enabled when annunciator on the button is green, disabled when annunciator is gray.

Displaying Connext information (Connext Weather Display)

1) From the **Home** Screen, touch **Weather > Weather Selection > Connext Weather > Connext Settings.**
2) Find the desired weather product button in the Overlays window. The weather product is enabled when annunciator on the button is green, disabled when annunciator is gray.

Connext Weather Status Messages

If the system cannot complete a weather data request, one or more messages will appear in the request status window.

Weather Request Status Message	Description
Auto requests inhibited Send manual request to reset.	The system has disabled automatic weather data requests due to excessive errors. Automatic weather data requests have stopped. Send a manual weather data request to resume automatic updates.

Weather Request Status Message	Description
Auto update retry: ## Seconds	The system will attempt another automatic weather data request after an error occurred during the previous request. Timer counts down until the next automatic request occurs.
Connext Comm Error [2]	A communications error has occurred with the GIA or GDL 59. The system should be serviced.
Connext Comm Error [4]	This occurs if multiple automatic weather data requests have recently failed, or the GIA is off-line.
Connext Comm Error [5]	The Iridium or Garmin Connext services are not accessible. Check Iridium signal strength. If this error persists, the system should be serviced.
Connext Comm Error [6]	A communications error has occurred. It this error persists, the system should be serviced.
Connext Comm Error [7]	A weather data transfer has timed out. Check Iridium signal strength and re-send the Connext Data Request.
Connext Comm Error [8]	A server error has occurred or invalid data received.
Connext Login Invalid	There is a problem with the Garmin Connext registration. Contact Garmin Connext at 1-866-739-5687 in the United States or 913-440-1135 for assistance.
Connext Server Temporarily Inop	The Garmin Connext weather data server is temporarily out of service, but is expected to return to service in less than 30 minutes.
Connext Server Inop	The Garmin Connext weather data server will be out of service for at least 30 minutes.
Invalid Coverage Area	The weather data request coverage area does not contain at least one of the following: a waypoint, a flight plan, or a flight plan destination. Verify at least one of the coverage options is enabled and contains required criteria, then re-send the data request.
No Connext Subscription	The system is not be currently subscribed to the Garmin Connext Weather service, or the access code is incorrect. Verify the access code. Contact Garmin Connext at 1-866-739-5687 in the United States or 913-440-1135 for assistance.

Weather Request Status Message	Description
Reduce Request Area	The weather data request area exceeds size limits. Reduce weather coverage area and re-send data request.
Request Cancelled	The user has cancelled a weather data request.
Requested area too large. Reduce coverage area.	The size of the weather data request has exceeded limits. Reduce the size of the coverage area and try the weather data request again.
Request Failed - Try Again	The weather data request timed-out. Re-send data request.
Transfer Preempted	The data link is busy. Retry request later.

Abnormal Weather Data Request Status Messages

TRAFFIC ADVISORY SYSTEM

The GTS 800 uses the symbology shown in the tables below to depict intruding traffic.

Traffic Symbol	Description
	Non-Threat Traffic
	Proximity Advisory (PA)
	Traffic Advisory (TA)
	Traffic Advisory Off Scale

Traffic Symbol Description

Traffic Symbol	Description
	Traffic Advisory with ADS-B directional information. Points in the direction of the intruder aircraft track.
	Proximity Advisory with ADS-B directional information. Points in the direction of the aircraft track.
	Non-threat traffic with ADS-B directional information. Points in the direction of the intruder aircraft track.
	Traffic with ADS-B directional information, but positional accuracy is degraded. Points in the direction of the aircraft track.

Traffic with ADS-B Symbology

Displaying traffic on the Traffic Map Display:

1) From the **Home** Screen, touch **Traffic > Traffic Settings**.
2) Touch the **Operate** Button. The button annunciator is green when operate mode is enabled, gray when disabled.

Displaying traffic information on the Navigation Map Display:

1) From the **Home** Screen, touch **Map > Map Settings > Map Options**.
2) If necessary, touch the **Sensors** Tab.
3) Touch the **Traffic** Button.

Put the Traffic Advisory System in standby mode:

1) From the **Home** Screen, touch **Traffic > Traffic Settings**.
2) Touch the **Standby** Button. The button annunciator is green when standby mode is enabled, gray when disabled.

Testing the Traffic Advisory System:

1) From the **Home** Screen, touch **Traffic > Traffic Settings**.
2) If the traffic system is in Standby Mode (**Standby** Button annunciator is green), proceed to step 4.
3) Touch the **Standby** Button to place the traffic system in Standby Mode.
4) Touch the **Test** Button.

Changing the altitude range:

1) From the **Home** Screen, touch **Traffic > Traffic Settings**.
2) Touch one of the following Altitude Mode Buttons:

   Unrestricted: All traffic is displayed from 9900 feet above and 9900 feet below the aircraft.

   Above: Displays non-threat and proximity traffic from 9000 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight.

   Normal: Displays non-threat and proximity traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight.

   Below: Displays non-threat and proximity traffic from 2700 feet above the aircraft to 9000 feet below the aircraft. Typically used during descent phase of flight.

TERRAIN-SVT

NOTE: *Terrain-SVT is only available when the Synthetic Vision Technology (SVT) option is installed and the TAWS option has not been installed.*

NOTE: *Terrain data is not displayed when the aircraft is outside of the installed terrain database coverage area.*

Displaying Terrain-SVT on the Terrain-SVT Display:

From the **Home** Screen, touch **Terrain SVT**.

Color	Terrain/Obstacle Location
Red	Terrain/Obstacle above or within 100' below current aircraft altitude.
Yellow	Terrain/Obstacle between 100' and 1000' below current aircraft altitude.
Black	Terrain/Obstacle is more than 1000' below aircraft altitude.

Enabling/disabling terrain information on the Navigation Map Display:

1) From the **Home** Screen, touch **Map** > **Map Settings**.
2) Touch the **Terrain Data** Button to display/remove terrain data on the navigation map. When the annunciator on the button is green, the system displays terrain data. When the annunciator is gray, the system removes terrain data from the navigation map.

Or:

1) From the **Home** Screen, touch **Map > Map Settings > Map Options**.
2) If necessary, touch the **Map** Tab.
3) Scroll to find the **Terrain Data** Button.
4) Touch the **Terrain Data** Button to enable/disable terrain data.

Enable/Disable aviation data on the Terrain-SVT Display:

1) From the **Home** Screen, touch **Terrain SVT** > **Terrain SVT Settings**.
2) Touch the **Aviation Data Shown** Button to display/remove aviation data on the Terrain-SVT Display. When the annunciator on the button is green, the system shows aviation data. When the annunciator is gray, aviation data is removed.

NOTE: *If Terrain-SVT alerts are inhibited when the Final Approach Fix is the active waypoint in a GPS SBAS approach, a LOW ALT annunciation may appear on the PFD next to the altimeter if the current aircraft altitude is at least 164 feet below the prescribed altitude at the Final Approach Fix.*

Inhibiting/Enabling Terrain-SVT alerting:

1) From the **Home** Screen, touch **Terrain SVT** > **Terrain SVT Settings**.
2) Touch the **Terrain Inhibit** Button. When the annunciator on the button is green, Terrain-SVT alerting is inhibited. When the annunciator is gray, Terrain-SVT alerting is enabled.

TERRAIN AWARENESS & WARNING SYSTEM (TAWS) DISPLAY (OPTIONAL)

NOTE: *Terrain data is not displayed when the aircraft is outside of the installed terrain database coverage area.*

NOTE: *TAWS operation is only available when the G2000 is configured for a TAWS installation.*

Displaying terrain on the TAWS Display:

From the **Home** Screen, touch **TAWS**.

Enabling/disabling terrain information on the Navigation Map Display:

1) From the **Home** Screen, touch **Map** > **Map Settings**.
2) If necessary, touch the **Sensor** Tab.
3) Touch the **Relative Terrain** Button to enable/disable the Relative Terrain. Relative Terrain is enabled when the button annunciator is green, disabled when gray.

Color	Terrain/Obstacle Location
Red	Terrain/Obstacle above or within 100' below current aircraft altitude.
Yellow	Terrain/Obstacle between 100' and 1000' below current aircraft altitude.
Black	Terrain/Obstacle is more than 1000' below aircraft altitude.

Manually testing the TAWS System:

1) From the **Home** Screen, touch **TAWS** > **TAWS Settings**.
2) Touch the **Test TAWS** Button.

Or:

1) From Home, touch **Map > Map Settings**.
2) If necessary, touch the **Sensor** Tab.
3) Touch the **Relative Terrain** Button.
4) Touch the Terrain Data **Settings** Button to display the TAWS Settings pop-up window.
5) Touch the **Test TAWS** Button.

Inhibiting/Enabling TAWS alerting:

NOTE: If TAWS alerts are inhibited when the Final Approach Fix is the active waypoint in a GPS SBAS approach, a LOW ALT annunciation may appear on the PFD next to the altimeter if the current aircraft altitude is at least 164 feet below the prescribed altitude at the Final Approach Fix.

1) From the **Home** Screen, touch **TAWS** > **TAWS Settings**.
2) Touch the **TAWS Inhibit** Button. When the annunciator on the button is green, TAWS alerting is inhibited. When the button annunciator is gray, TAWS alerting is enabled.

Or:

1) From the **Home** Screen, touch **Map > Map Settings**.
2) If necessary, touch the **Sensor** Tab.
3) Touch the **Relative Terrain** Button.
4) Touch the Terrain Data **Settings** Button to display the TAWS Settings pop-up window.
5) Touch the **TAWS Inhibit** Button. When the annunciator on the button is green, TAWS alerting is inhibited. When the annunciator is gray, TAWS alerting is enabled.

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ADDITIONAL FEATURES

TERMINAL PROCEDURE CHARTS

NOTE: With the availability of SafeTaxi®, ChartView, or FliteCharts®, it may be necessary to carry another source of charts on-board the aircraft.

SafeTaxi® (Optional)

SafeTaxi is an enhanced feature that gives greater map detail when viewing airports at close range on the Navigation Map or the Inset Map on the PFD. When viewing at ranges close enough to show the airport detail, the map reveals taxiways with identifying letters/numbers, airport Hot Spots, and airport landmarks including ramps, buildings, control towers, and other prominent features. Resolution is greater at lower map ranges. When the aircraft's current position is within the SafeTaxi view, the airplane symbol on the airport provides enhanced position awareness.

Designated Hot Spots are recognized at airports with many intersecting taxiways and runways, and/or complex ramp areas. Airport Hot Spots are outlined to caution pilots of areas on an airport surface where positional awareness confusion or runway incursions happen most often. Hot Spots are defined with a magenta circle or outline around the region of possible confusion.

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams provide the pilot with situational awareness by displaying the aircraft position in relation to taxiways, ramps, runways, terminals, and services. This information should not be used by the pilot as the basis for maneuvering the aircraft on the ground.

This database is updated on a 56-day cycle.

ChartView (Optional)

ChartView resembles the paper version of Jeppesen terminal procedures charts. The charts are displayed in full color with high-resolution. The selected Display Pane depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function.

Selecting Charts using the Charts Screen:

1) From the **Home** Screen, touch **Charts**.
2) The airport for which charts will be displayed is shown at the top of the Charts Screen. Touch the Airport Button to enter another airport.
3) Touch the **Info** Tab to display the airport information selection buttons for the selected airport.

   • **Departure** Tab to display a list of possible departures for the selected airport.

   • **Arrival** Tab to display a list of possible arrivals for the selected airport.

   • **Approach** Tab to display a list of possible approaches for the selected airport.
4) Touch the desired information button in any of these lists to display the applicable chart on the selected Display Pane.
5) Touch the **Charts Options** Button to select the desired display option for the selected chart.
6) Touch **All** to display the complete chart. The ChartView option also offers **Plan, Minimums, Profile,** and **Header** display options**.** Only appropriate views are available for the selected chart.

   Plan displays only the diagram portion of the chart.

   Minimums displays only the approach minimums on an approach chart.

   Profile displays only the descent profile on the approach chart.

   Header displays the chart heading.
7) Turn the Joystick to zoom.
8) Push the Joystick to activate panning for the selected chart.
9) Touch **Back** to return to the Charts Screen.

Selecting Day, Night, or Auto View:

1) From the **Home** Screen, touch **Charts** > **Charts Options**.
2) Touch the **Light Mode** Button.
3) Touch the **Day**, **Night**, or **Auto** button. The selection is annunciated on the **Light Mode** Button. When **Auto** is selected, the display will change to the appropriate day or night setting, dependent on ambient lighting.

FliteCharts® (Optional)

FliteCharts® resemble the paper version of AeroNav Services terminal procedures charts. The charts are displayed with high-resolution and in color for applicable charts. The selected Display Pane depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The FliteCharts database contains procedure charts for the United States only. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts will no longer function.

Selecting Charts using the Charts Screen:

1) From the **Home** Screen, touch **Charts**.
2) The airport for which charts will be displayed is shown at the top of the Charts Screen. Touch the Airport Button to enter another airport.
3) Touch the **Info** Tab to display the airport information selection buttons for the selected airport.
   - **Departure** Tab to display a list of possible departures for the selected airport.
   - **Arrival** Tab to display a list of possible arrivals for the selected airport.
   - **Approach** Tab to display a list of possible approaches for the selected airport.
4) Touch the desired information button in any of these lists to display the applicable chart in the selected display pane.
5) Turn the GTC Joystick to zoom the selected chart.
6) Push the GTC Joystick to activate panning for the selected chart.

Selecting Day, Night, or Auto View:

1) From the **Home** Screen, touch **Charts** > **Charts Options**.
2) Touch the **Light Mode** Button.
3) Touch the **Day**, **Night**, or **Auto** button. The selection is annunciated on the **Light Mode** Button. When **Auto** is selected, the display will change to the appropriate day or night setting, dependent on ambient lighting.

AIRPORT DIRECTORY

The Aircraft Owners and Pilots Association (AOPA) or AC-U-KWIK Airport Directory database offers detailed information regarding services, hours of operation, lodging options, and more for various airports. This information is viewed on the Airport Directory Info Screen.

The Airport Directory databases are revised every 56 days. The Airport Directory is always available for use after the expiration date.

Selecting the Airport Directory Info Screen:

1) From the **Home** Screen, touch **Nearest** > **Airports**.
2) A list of the nearest airports to the aircraft present position is displayed, beginning with the closest. Touch the desired airport, in this case KCOS. The **Waypoint Options** buttons are displayed.
3) Touch the **Airport Info** Button to display the Airport Directory Info Screen.
4) Touch the **APT DIR** Tab to display the Airport Directory information for the selected airport.

SIRIUSXM RADIO ENTERTAINMENT (OPTIONAL)

Service is activated by first establishing an account with SiriusXM Satellite Radio. For more information on specific service packages, visit www.siriusxm.com.

Selecting Channels

The Channel field on the Music Screen shows the available channels for the selected audio entertainment category. The Now Playing field shows information for the currently active channel.

Selecting a channel from the channel list:

1) From the **Home** Screen, touch **Services** > **Music** to access the Music Screen.
2) Touch the desired channel in the channel list. The selected channel is now shown in the Now Playing field.

Selecting a channel directly:

1) From the **Home** Screen, touch **Services > Music** > **Channel**.
2) The numeric keypad is displayed. Enter the desired channel number.
3) Press the **Enter** Button. The selected channel is now shown in the Now Playing field.

Entertainment Categories

The Category field on the Music Screen shows the currently selected entertainment category. Categories of audio entertainment, such as jazz, rock, talk/news, sports, etc., can be selected to list the available channels for a type of music or other contents.

Selecting a category:

1) From the **Home** Screen, touch **Services> Music** > **Category**. The list of categories is displayed.
2) Scroll to view the available categories.
3) Touch the desired category to select. The selected category is displayed on the **Category** Button and the channel list displays channels available for the selected category.

Favorites

Channels can be saved to a list of favorites and recalled for listening later.

Save a channel to favorites list:

1) From the **Home** Screen, touch **Services > Music** to access the Music Screen.
2) Select a desired channel as the 'Now Playing' channel.
3) Touch the **Favorite** Annunciator Button. The current channel is placed in the favorites list. Note, a green annunciator indicates a that the 'Now Playing' channel is a favorite.

Select a favorite channel for listening:

1) From the **Home** Screen, touch **Services > Music** > **Category**. The list of categories is displayed.
2) If necessary, scroll to view the **Favorites** Button.

3) Touch the **Favorites** Button to view the favorite channel list.

4) Touch the desired channel in the list. The channel is now displayed in the Now Playing field.

Adjusting Volume

Entertainment audio volume is shown in the Volume field as a percentage of full volume. Volume can be muted manually, or muting may be initiated automatically when other audio, such as radio, intercom, or aural alerts, is present.

Adjusting the volume:

1) From the **Home** Screen, touch **Services > Music** > **Volume**. The volume adjustment slider is displayed.

2) Touch and drag the slider to the right or left to adjust the volume. Drag to the right increases volume. Drag to the left to decrease the volume.

Muting or unmuting the volume:

1) From the **Home** Screen, touch **Services > Music** > **Volume**.

2) Touch the **Music** Annunciator Button to mute or unmute the volume. Muted volume is indicated by a gray annunciator. Unmuted volume is indicated by a green annunciator.

3) Touch the **Back** Button to return to the Music Screen. When the volume is muted, 'Muted' is displayed in the Volume field.

Mute settings:

1) From the **Home** Screen, touch **Services > Music** > **Volume** > **Mute Settings**.

2) Touch the **Intercom** Annunciator Button to allow automatic muting of entertainment audio when intercom audio is present. This function is active when the annunciator is green.

3) Touch the **Radio Inputs** Annunciator Button to allow automatic muting of entertainment audio when COM, NAV, ADF, etc. audio is present. This function is active when the annunciator is green.

4) Touch the **Aural Alerts** Annunciator Button to allow automatic muting of entertainment audio when an aural alert is issued. This function is active when the annunciator is green.

5) Touch the **Back** Button to return to the Music Screen.

TEXT MESSAGING (SMS) (OPTIONAL)

The pilot or copilot can send and receive text messages on the Iridium satellite network. Messages may be sent to an email address or text message capable cellular telephone. Message length is limited to 160 characters, including the email address.

Viewing a Text Message When Received

1) Touch the flashing **SMS** Button. The **SMS Text Inbox** Tab is automatically selected and the newly received text message is shown at the top of the list.
2) Touch the desired message to display its contents.
3) If desired, touch **Reply** to create a reply to the message.
4) Touch **Delete** to delete the message from the list.
5) Touching **Save Contact** saves the contact information in the system contact list.

Reply to a Text Message

While viewing the text message content, touch the **REPLY** Button.

Or:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the desired text message in the Inbox list. If necessary, scroll to the desired message. The text message is displayed.
3) Touch the **REPLY** Button. The Opened SMS Text Message Screen is displayed.
4) Touch the 'Message' Window to display the alphanumeric buttons.
5) Enter the reply text.
6) Touch the **Enter** Button. The reply message is displayed.
7) Touch the **Send** Button. The SMS Message Replied To Screen is displayed.
8) If desired, touch the **Reply Again** Button to resend the reply.
9) Touch **Delete** to delete the message from the list.
10) Touching **Save Conact** saves the contact information in the system contact list.

Sending a Text Message

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Options** Button. The available options are displayed.
3) Touch the **Draft New Message** Button. The Opened SMS Text Message Draft Screen is displayed. The Draft New Message option is also available from within the **Drafts** and **Outbox** Tabs.
4) Touch the 'To' Window. A selection screen is displayed. If the text message is to be sent to SMS compatible telephone, touch the **Phone** Button. If the message is to be sent to an email address, touch **Email**.
5) Enter the telephone number or email address. The number or address may be obtained from the Contacts by touching the **Find** Button.
6) Touch the **Enter** Button. The number or address is now displayed.
7) Touch the 'Message' Window. The alphanumeric buttons are displayed.

Text Message Boxes

Received text messages reside in the Inbox as 'Read' or 'Unread' messages. The Outbox contains 'Sent" and 'Unsent' text messages. Saved messages that are meant to be sent later are stored as Drafts.

View Inbox messages:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Inbox** Tab. A list of received messages is displayed. The **Inbox** Tab is selected by default when accessing the SMS Text Messaging Screen.

View Draft messages:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Draft** Tab. A list of draft messages is displayed, provided messages have been previously saved.
3) Touch a message to access the **Send** or **Delete** Buttons.

View Outbox messages:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Inbox** Tab. A list of sent or unsent messages is displayed.
3) Touch a message to access the **Send Again**, **Delete,** and **Save Contact** Buttons.

Managing Text Messages

The following table illustrates the various message status icons.

Message Symbol	Description
	Received text message that has not been opened
	Received text message that has been opened
	A reply has been sent for this text message
	Saved text message, draft not sent
	System is sending text message
	Text message has been sent
	System failed to send text message

The viewed messages in the Inbox, Outbox, or Drafts may be listed according to the date/time the message was sent or received or by message address.

Viewing messages sorted by message date/time:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Options** Tab. The 'Sort Messages By' selections are displayed.
3) Touch the **Time** Button. A green annunciator indicates an active selection.
4) Touch the **Back** Button to return to the previously selected message box.

Viewing messages sorted by address:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Options** Tab. The 'Sort Messages By' selections are displayed.
3) Touch the **Address** Button. A green annunciator indicates an active selection.
4) Touch the **Back** Button to return to the previously selected message box.

Marking all messages as read:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Options** Tab. The selection buttons are displayed.
3) Touch the **Mark All Read** Button.
4) Touch the **Back** Button to return to the Inbox. All messages in the Inbox now indicate they have been opened.

Delete all messages:

1) From the **Home** Screen, touch **Services** > **SMS Text**.
2) Touch the **Options** Tab. The selection buttons are displayed.
3) Touch the **Delete All Messages** Button. A confirmation screen is displayed.
4) Touch the **OK** Button.
8) Enter the message text.
9) Touch the **Enter** Button. The message text is displayed in the 'Message' Window.
10) Touch the **Send** Button.

SCHEDULED MESSAGES

When a scheduled message is activated, the **MSG** Button flashes inverse video and **GTC MSG** flashes inverse video on the PFD. Touching the **MSG** Button on the Touchscreen Controller opens the Messages Screen and acknowledges the message, indicated by the removal of the message annunciation on the PFD and the **MSG** Button ceasing to flash. Touching the **MSG** Button again removes the Messages Screen from view, and the scheduled message is deleted from the message queue.

Messages can be set to display based on a specific date and time (Event), once the message timer reaches zero (One Time), or recurrently whenever the message timer reaches zero (Periodic). Message timers set to periodic alerting automatically reset to the original timer value once the message is displayed. When power is cycled, all messages are retained until deleted, and message timer countdown is resumed.

Entering a scheduled message:

1) From the **Home** Screen, touch **Utilities** > **Scheduled Messages**.
2) Touch the **Add Message** Button.

3) Touch the **Message** Button.
4) The keypad is displayed. Enter the message name using the keypad. The large and small Right Knob can also be used to enter the characters.
5) Touch the **Enter** Button. The message name is displayed on the **Message** Button.
6) Touch the **Frequency** Button.
7) Touch **Event**, **One Time**, or **Periodic**. The selection is displayed on the **Frequency** Button.
8) Touch the **Time** Button.
9) The numeric keypad is displayed. Enter the time value using the keypad. If **One Time** or **Periodic** were selected in step 7, the time is entered in a HH:MM:SS format. If **Event** was selected in step 7, time is entered in a clock format (HH:MM LCL) as local time.
10) Touch the **Enter** Button. The time is displayed on the **Time** Button.
11) If **Event** was selected in step 7, touch the **Date** Button. The **Date** Button is subdued and disabled when **One Time** or **Periodic** were selected in step 7.
12) Touch the desired year, then the month followed by the day.

Edit a scheduled message:

1) From the **Home** Screen, touch **Utilities** > **Scheduled Messages**.
2) Touch the name of the message to be edited. The Message Options Window is displayed.
3) Touch the **Edit Message** Button.
4) Select the desired message parameter to be edited and perform the needed steps as discussed previously for entering a scheduled message.

Deleting a scheduled message:

1) From the **Home** Screen, touch **Utilities** > **Scheduled Messages**.
2) Touch the name of the message to be deleted. The Message Options Window is displayed.
3) Touch the **Delete Message** Button. Touch the **Delete All Messages** Button to delete all saved messages.

ELECTRONIC STABILITY AND PROTECTION

The Garmin ESP™ Electronic Stability and Protection system is designed to provide automatic control inputs to discourage aircraft operation outside the normal flight envelope. ESP works to maintain the desired pitch and roll operating envelope by automatically engaging one or more servos when the aircraft is near a defined pitch and/or roll operating limit. While ESP uses the same sensors, processors, and actuators as the GFC 700 autopilot, it is a separate function. When the GFC 700 autopilot is engaged and/or the aircraft is at or below 200 feet AGL, the ESP system will not operate.

ESP engages when the aircraft exceeds one or more conditions (pitch, roll, and/or Vne) beyond the normal flight parameters. Enhanced stability for each condition is provided by applying a force to the appropriate control surface to return the aircraft to the normal flight envelope. This is perceived by the pilot as resistance to control movement in the undesired direction when the aircraft approaches a steep attitude, high airspeed, or when a stall is imminent.

As the aircraft deviates further from the normal attitude or airspeed continues to increase, the force increases (up to an established maximum) to encourage control movement in the direction necessary to return to the normal attitude and/or airspeed range. Except in the case of high airspeed, when maximum force is reached, force remains constant up to the maximum engagement limit. Above the maximum engagement limit, forces are no longer applied. There is no maximum engagement related to a high airspeed condition.

When ESP has been engaged for more than ten seconds (cumulative; not necessarily consecutive seconds) of a 20-second interval, the autopilot is automatically engaged with the flight director in Level Mode, bringing the aircraft into level flight. An aural "Engaging Autopilot" alert is played and the flight director mode annunciation will indicate 'LVL' for vertical and lateral modes.

The pilot can interrupt ESP by pressing and holding the Autopilot Disconnect (**AP DISC**) switch. Upon releasing the **AP DISC** switch, ESP force will again be applied, provided aircraft pitch and roll attitudes are within engagement limits. ESP can also be overridden by overpowering the servo's mechanical torque limit.

ESP can be enabled or disabled on the Avionics Settings Screen on the Touchscreen Controller.

To enable or disable ESP:

1) From the **Home** Screen, touch **Utilities** > **Setup** > **Avionics Settings**.
2) If necessary, touch the **System** Tab
3) Scroll to display the **Stability & Protection Enable** Button.
4) Touch the **Enable** Button. A green annunciator indicates ESP is enabled. A gray annunciator indicates ESP is disabled.

Roll Engagement

Roll Limit Indicators are displayed on the roll scale at 45° right and left, indicating where ESP will engage. As roll attitude exceeds 45°, ESP will engage and the on-side Roll Limit Indicator will move to 30°. The Roll Limit Indicator is now showing where ESP will disengage as roll attitude decreases.

Once engaged, ESP force will be applied between 30° and 75°. The force increases as roll attitude increases and decreases as roll attitude decreases. The applied force is intended to encourage pilot input that returns the airplane to a more normal roll attitude. As roll attitude decreases, ESP will disengage at 30°.

ESP is automatically disengaged if the aircraft reaches the autopilot roll engagement attitude limit of 75°.

Pitch Engagement

ESP engages at 17° nose-up and 19° nose-down. Once ESP is engaged, it will apply opposing force between 12° and 50° nose-up and between 14° and 50° nose-down. Maximum opposing force is applied between 22° and 50° nose-up and between 23° and 50° nose-down.

The opposing force increases or decreases depending on the pitch angle and the direction of pitch travel. This force is intended to encourage movement in the pitch axis in the direction of the normal pitch attitude range for the aircraft.

There are no indications marking the pitch ESP engage and disengage limits in these nose-up/nose-down conditions.

High Airspeed Protection

Exceeding Vne will result in ESP applying force to raise the nose of the aircraft. When the high airspeed condition is remedied, ESP force is no longer applied.

ELECTRONIC DOCUMENTS (OPTIONAL)

The system allows the display of electronic documents from two sources. These sources are Installed and User documents.

Installed Documents

'Installed' Documents are typically provided by the aircraft manufacturer. These documents are stored on the Supplemental Data Cards, along with the databases, located in the bottom SD Card slot of each PFD and the MFD. Each Supplemental Data Card contains identical document files.

User Documents

'User' Documents are those loaded by the crew. User Documents must be in .pdf format and reside on an SD Card no larger than 16GB. The Maximum document file size is 1.5GB. The maximum number of pages per document is limited to 9,999. Pages with large and/or numerous images may exceed RAM memory limits, therefore, may not be displayed correctly or not displayed at all.

An SD card must be inserted into the top card slot of each display on which it is desired to view the user documents. Each display can only access electronic documents on the SD Cards that are inserted in that display.

User Documents can be unique to the display on which they are viewed.

Supported PDF Features

User Documents must be in .pdf format. The following .pdf features are not supported. If a file contains any of these features, the system will ignore the feature and display the document.

- Embedded files (attachments)
- Alternate images (using a different image for display and printing)
- Page labels (alternate page numbers; e.g. for i, ii, iii, iv for table of contents)
- Additional annotations, including file attachment annotation, sound annotation, movie annotation, widget annotation, and trap network annotation.
- Digital signatures
- Javascript
- Logical structure (structuring documents into chapters, paragraphs, headings, footnotes)
- Web capture information (annotations for search engines)
- Prepress support (annotations for newspapers, etc.)

SD Card File Structure for User Documents

User document files must reside on the SD card in a directory named "Documents". The list of available User Documents is limited to 100 documents and are shown in alphabetical order based on filename.

Viewing Electronic Documents

To select a document:

1) From the **Home** Screen, touch **Utilities > Documents**. The Document Viewer is now displayed.
2) Touch the **Selected Document** Button.
3) Touch the **Installed** or **User** Tab to select the desired document source. In this example, Installed documents is selected.
4) Touch the desired document button. The selected document name is displayed in the **Selected Document** Button. The document is displayed in the selected pane.

To change Document Viewer options:

1) From the **Home** Screen, touch **Utilities > Documents > Options**.
2) Touch **Document Info** to view information pertaining to the document, such as files size and creation date.
3) Touch **Fit Page** to view the complete page in the selected pane.
4) Touch **Fit Width** to enlarge the displayed page to fill the width of the selected pane.
5) Touching the Rotate Page Buttons will rotate the displayed page 90 degrees to the right or left (depending on button touched) within the selected pane. Each subsequent touch will rotate the page another 90 degrees.
6) Touch the Brightness Slider to adjust the brightness of the displayed page.

To browse the document:

1) After selecting the desired document, touch the **Next Page** and **Prev Page** buttons to increment and decrement one page with each touch.
2) The Page Select Button shows the number of pages contained in the document and the page currently being displayed. Touch the Page Select Button to jump to a specific page number. The Enter Page Number screen is displayed.
3) Touch the **Find** Button to display the Document Viewer Find screen.
4) If necessary, touch the **Table of Contents** Tab to display the document Table of Contents.
5) Touch the desired topic to jump to that portion of the document. In this example, Flight Instruments is selected and the Flight Instruments section is displayed.

Creating bookmarks in the document:

1) While viewing the page to bookmark, touch the **Find** Button on the appropriate Touchscreen Controller.
2) Touch the **Bookmark** Tab to display the Bookmark Window.
3) Touch the **Bookmark Current Page** Button. The Enter Bookmark Name Screen is displayed.
4) Touch **Enter**. A confirmation screen is displayed.
5) Touch **OK**. The newly created bookmark is displayed.

Using document bookmarks:

1) With the desired document displayed, touch the **Find** Button to display the Document Viewer Find Screen.
2) Touch the **Bookmark** Tab to display the Bookmark Window.
3) Touch the **X** Button next to the bookmark to be deleted.
4) Touch **OK** on the confirmation screen.
5) Again, touch **OK**.

ENVIRONMENTAL CONTROL SETTINGS

The ECS Screen allows control of cabin temperature control, fan speed settings, and windscreen defogging.

Enabling/Disabling ECS:

1) From the **Home** Screen, touch **Aircraft Systems** > **ECS.**
2) Touch the **ECS ON** Button. A green annunciator indicates ECS is enabled. A gray annunciator indicates ECS is disabled.

Adjusting cabin temperature:

1) From the **Home** Screen, touch **Aircraft Systems** > **ECS.**
2) Touch and slide the temperature slider.

   Or:

   Touch the **+** pointer to increase the temperature, or **-** pointer to decrease the temperature. Each touch increases or decreases one degree.

   The selected cabin temperature is displayed above the temperature slider. The actual cabin temperature is displayed to the left of the selected temperature.

Setting fan mode:

1) From the **Home** Screen, touch **Aircraft Systems** > **ECS.**
2) Touch the **Mode** Button to select **Manual** or **Auto**. Each touch of the button switches between manual and automatic mode. Manual mode allows the fan speed to be adjusted manually. Auto mode allows the ECS to determine proper fan speed for the selected temperature.

Adjusting manual fan speed:

1) From the **Home** Screen, touch **Aircraft Systems** > **ECS.**
2) If needed, touch the **Mode** Button to display 'Manual' on the button label.
3) Touch and slide the fan speed slider.
   Or:

   Touch the **+** pointer to increase fan speed, or **-** pointer to decrease fan speed. Each touch increases or decreases ten percent. The manual fan speed setting is displayed above the fan speed slider as a percent of maximum speed.

Enabling/Disabling windshield defogging:

1) From the **Home** Screen, touch **Aircraft Systems** > **ECS.**
2) Touch the **DEFOG** Button. A green annunciator indicates defogging is enabled. A gray annunciator indicates defogging is disabled.

Enabling/Disabling the optional air-conditioning system:

1) From the **Home** Screen, touch **Aircraft Systems** > **ECS.**
2) Touch the **A/C** Button. A green annunciator indicates air-conditioning is enabled. A gray annunciator indicates air-conditioning is disabled.

CREW PROFILES

The crew profile feature enables the flight crew to conveniently store and recall a group of system settings using a named crew profile. Each crew profile contains a wide range of parameters including settings for maps (for each display pane location), avionics, trip planning, certain PFD softkey selections, traffic, chart display preferences, weight and fuel information, and more.

From the Crew Profile Page, crew profiles may be added, renamed, activated, copied, or deleted. In addition, crew profiles can be imported from an SD card, or exported to an SD card. By default, 'DEFAULT PROFILE' is the active crew profile. This profile cannot be deleted or renamed.

Adding a new crew profile:

1) If necessary, adjust the system settings as desired to be used for the crew profile to be added.
2) From the **Home** Screen, touch **Utilities > Crew Profile**.
3) Scroll if necessary, and touch the **Add Profile** Button.
4) Input the name to assign to the crew profile using the keypad or the large and small right knobs, then touch **Enter** or press the **Right Knob**. Crew Profiles may be up to 16 characters long, and cannot share the exact name of another crew profile.

Activating a crew profile:

1) From the **Home** Screen, touch **Utilities > Crew Profile**.
2) Scroll if necessary, and touch the button for the crew profile to be activated.

3) Touch the **Activate** Button. When finished, the system displays the name of the selected crew profile in the 'Active Profile' window.

Copying an existing crew profile:

1) From the **Home** Screen, touch **Utilities > Crew Profile**.
2) Scroll if necessary, and touch the button for the crew profile to be copied.
3) Touch the **Copy** Button.
4) Input the name to assign to the copied crew profile using the keypad or the large and small right knobs, then touch **Enter** or press the **Right Knob**. Crew Profiles may be up to 16 characters long, and cannot share the exact name of another crew profile. The Crew Profile screen displays the name of the copied profile in the list.

Renaming an existing crew profile:

1) From the **Home** Screen, touch **Utilities > Crew Profile**.
2) Scroll if necessary, and touch the button for the crew profile to be renamed.
3) Touch the **Rename** Button.
4) Input the new name to assign to the selected crew profile using the keypad or the large and small right knobs, then touch **Enter** or press the **Right Knob**. Crew Profiles may be up to 16 characters long, and cannot share the exact name of another crew profile. The Crew Profile screen displays the name of the renamed crew profile in the list.

Deleting a crew profile:

NOTE: *The system cannot delete the currently active crew profile. If necessary, activate another crew profile prior to deletion.*

1) From the **Home** Screen, touch **Utilities > Crew Profile**.
2) Scroll if necessary, and touch the button for the profile to be deleted.
3) Touch the **Delete** Button.
4) Touch the **OK** Button to confirm and delete the profile, or touch the **Cancel** Button.

Importing a crew profile from an SD card:

1) If necessary, insert an SD card containing a crew profile into the top card slot in the MFD.
2) From the **Home** Screen, touch **Utilities > Crew Profile**.
3) Touch the **Import** Button.
4) Scroll if necessary, and touch the button for the crew profile to be imported.

Exporting a crew profile to an SD card:

1) If necessary, insert an SD card to store a crew profile into the top card slot in the MFD.
2) From the **Home** Screen, touch **Utilities > Crew Profile**.
3) Scroll if necessary, and touch the button for the crew profile to be exported from the list.
4) Touch the **Export** Button.

ELECTRONIC CHECKLISTS (OPTIONAL)

NOTE: *The checklists presented in this section are for example only and may not reflect checklists actually available for the Cessna T240. The information described in this section is not intended to replace the checklist information described in the AFM or the Pilot Safety and Warning Supplements document.*

NOTE: *Garmin is not responsible for the content of checklists. User-defined checklists are created by the aircraft manufacturer. Modifications or updates to the checklists are coordinated through the aircraft manufacturer. The user cannot edit these checklists.*

The system accesses the optional checklists from an SD card inserted into the bezel slot. If the SD card contains an invalid checklist file or no checklist, the Power-up Page messages display 'Checklist File: Invalid' or 'Checklist File: N/A' (not available) and **Checklist** is not available on the **Home** Screen.

Viewing Checklists:

1) From the **Home** Screen, touch **Checklist**.
2) Touch the tab pertaining to the desired checklist category.

3) If necessary, scroll the list to access the required checklist. Touch the desired checklist in the list. The selected checklist is displayed in the Checklist Pane.

4) Turn either the large or small right knob on the Touchscreen Controller to select checklist items. The selected checklist item is indicated with a surrounding white box.

5) Press the small right knob on the Touchscreen Controller to check the selected checklist item. The line item turns green and a check mark is placed in the associated box. The next line item is automatically selected for checking.

   Press the small right knob on the Touchscreen Controller again to remove a check mark from an item.

6) When all checklist items have been checked, '*Checklist Finished*' is displayed in green text at the bottom left of the Checklist Pane. If all items in the checklist have not be checked when sequencing through the last checklist item, '*CHECKLIST NOT FINISHED*' will be displayed in yellow text.

7) 'GO TO NEXT CHECKLIST?' will now be highlighted.

8) Press the small right knob on the Touchscreen Controller to advance to the next checklist.

Resetting A Specific Checklist:

1) From the **Home** Screen, touch **Checklist**.
2) Touch the desired checklist to reset.
3) Touch the **Checklist Options** Button.
4) Touch **Reset Current Checklist**.

Resetting All Checklists:

1) From the **Home** Screen, touch **Checklist**.
2) Touch the **Checklist Options** Button.
3) Touch **Reset All Checklists**.

Blank Page

ABNORMAL OPERATION

NOTE: The Cessna Corvalis T240 Airplane Flight Manual (AFM) always takes precedence over the information found in this section.

REVERSIONARY MODE

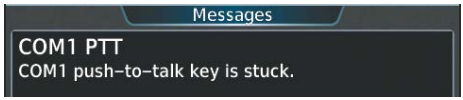
Should a system detected failure occur in either display, the G2000 automatically enters reversionary mode. In reversionary mode, critical flight instrumentation is combined with engine instrumentation on the remaining display.

If the system fails to detect a display problem, Reversionary Mode may be manually activated by pressing the **DISPLAY REVERSIONARY** Button on the instrument panel. Pressing this button again deactivates Reversionary Mode.

STUCK MICROPHONE

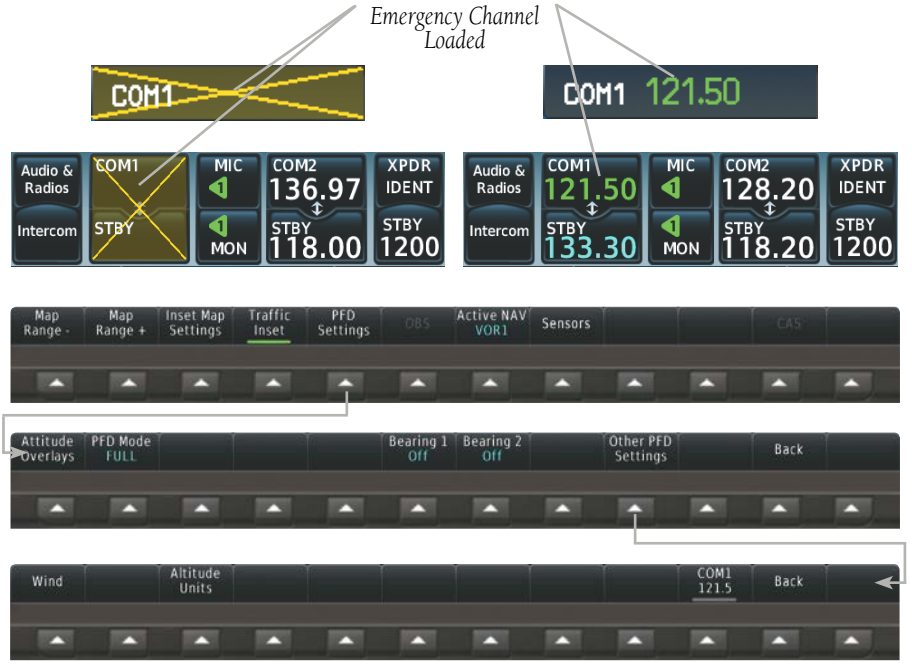
If the push-to-talk (PTT) Key becomes stuck, the COM transmitter stops transmitting after 35 seconds of continuous operation. An alert appears on the Touchscreen Controller to advise the pilot of a stuck microphone.

The **MIC** Button Annunciator flashes as long as the PTT Key remains stuck.



COM TUNING FAILURE

In case of a COM system tuning failure, the emergency frequency (121.500 MHz) is automatically tuned in the radio in which the tuning failure occurred. Depending on the failure mode, a yellow X may appear on the frequency display. The emergency frequency (121.500 MHz) may also be tuned by pressing the **PFD Settings > Other PFD Settings > COM1 121.5**.



COM Tuning Failure

AUDIO CONTROLLER FAIL-SAFE OPERATION

If there is a failure of the Audio Controller, a fail-safe circuit connects the pilot's headset and microphone directly to the COM1 transceiver. Audio will not be available on the speaker.

HAZARD DISPLAYS WITH LOSS OF FMS POSITION

If FMS position is lost, or becomes invalid, selected hazards being displayed on the Navigation Map Display are removed until FMS position is again established.

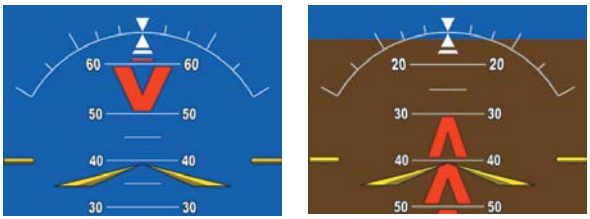
Loss of Hazard Functions with Loss of FMS Position

UNUSUAL ATTITUDES

The PFD 'declutters' when the aircraft enters an unusual attitude. Only the primary functions are displayed in these situations.

The following information is removed from the PFD (and corresponding softkeys are disabled) when the aircraft experiences unusual attitudes:

- Traffic Annunciations
- AFCS Annunciations
- Flight director Command Bars
- Inset Map
- Temperatures
- DME Information Window
- Wind Data
- Selected Heading Box
- Selected Course Box
- Transponder Status Box
- System Time
- PFD Setup Menu
- Windows displayed in the lower right corner of the PFD:
  - Timer/References
  - Nearest Airports
  - Flight Plan
  - Messages
  - Procedures
  - ADF/DME Tuning
- Barometric Minimum Descent Altitude Box
- Glideslope, Glidepath, and Vertical Deviation Indicators
- Altimeter Barometric Setting
- Selected Altitude
- VNV Target Altitude



Extreme Pitch Indication

DEAD RECKONING

While in Enroute or Oceanic phase of flight, if the G2000 detects an invalid FMS/GPS solution or is unable to calculate a FMS/GPS position, the system automatically reverts to Dead Reckoning (DR) Mode. In DR Mode, the G2000 uses its last-known position combined with continuously updated airspeed and heading data (when available) to calculate and display the aircraft's current estimated position.

NOTE: *Dead Reckoning Mode only functions in Enroute (ENR) or Oceanic (OCN) phase of flight. In all other phases, an invalid GPS solution produces a "NO GPS POSITION" annunciation on the map and the G2000 stops navigating in GPS Mode.*

DR Mode is indicated on the G2000 by the appearance of the letters 'DR' being prominently displayed, in yellow, on the HSI slightly below and to the left of the aircraft symbol on the CDI as shown in the following figure. The CDI deviation bar is displayed in yellow, but will be removed from the display after 20 minutes. Lastly, but at the same time, a 'GPS NAV LOST' alert message appears on the GTC.

Normal navigation using GPS/SBAS source data resumes automatically once a valid GPS solution is restored.

It is important to note that estimated navigation data supplied by the G2000 in DR Mode may become increasingly unreliable and must not be used as a sole means of navigation. If, while in DR Mode, airspeed and/or heading data is also lost or not available, the DR function may not be capable of estimating your position and, consequently, the system may display a path that is different than the actual movement of the aircraft. Estimated position information displayed by the G2000 through DR while there is no heading and/or airspeed data available should not be used for navigation.

DR Mode is inherently less accurate than the standard GPS/SBAS Mode due to the lack of satellite measurements needed to determine a position. Changes in wind speed and/or wind direction compounds the relative inaccuracy of DR Mode. Because of this degraded accuracy, the crew must maintain position awareness using other navigation equipment until GPS-derived position data is restored.

CDI 'DR' Indication on PFD

FMS 'DR' Indication on PFD

Dead Reckoning Indications

As a result of operating in DR Mode, all GPS-derived data is computed based upon an estimated position and is displayed as yellow text on the display to denote degraded navigation source information. This data includes the following:

- Navigation Status Box fields except Active Leg, TAS, and DTK
- GPS Bearing Pointer
- Wind data and pointers in the Wind Data Box on the PFD
- Current Track Indicator
- All Bearing Pointer Distances
- Active Flight Plan distances, bearings, and ETE values

Also, while the G2000 is in DR Mode, the autopilot will couple to GPS for up to 20 minutes. Terrain Proximity, TERRAIN-SVT, and TAWS are also disabled. Additionally, the accuracy of all nearest information (airports, airspaces, and waypoints) is questionable. Finally, airspace alerts continue to function, but with degraded accuracy.

SUSPECTED AUTOPILOT MALFUNCTION

***NOTE:** Consult the aircraft documentation for the location of circuit breakers as well as specifics that may supplement or amplify this procedure.*

If an autopilot failure or trim failure is suspected to have occurred, perform the following steps:

1) Firmly grasp the control wheel.

2) Press and hold the **AP DISC** Switch. The autopilot will disconnect and power is removed from the trim motor. Power is also removed from all primary servo motors and engaged solenoids. Note the visual and aural alerting indicating autopilot disconnect.

3) Retrim the aircraft as needed. Substantial trim adjustment may be needed.

4) Pull the appropriate circuit breaker(s) to electrically isolate the servo and solenoid components.

5) Release the **AP DISC** Switch.

OVERPOWERING AUTOPILOT SERVOS

In the context of this discussion, "overpowering" refers to any pressure or force applied to the pitch controls when the autopilot is engaged. A small amount of pressure or force on the pitch controls can cause the autopilot automatic trim to run to an out-of-trim condition. Therefore, any application of pressure or force to the controls should be avoided when the autopilot is engaged.

Overpowering the autopilot during flight will cause the autopilot's automatic trim to run, resulting in an out-of-trim condition or cause the trim to hit the stop if the action is prolonged. In this case, larger than anticipated control forces are required after the autopilot is disengaged.

The following steps should be added to the preflight check:

1) Check for proper autopilot operation and ensure the autopilot can be overpowered.

2) Note the forces required to overpower the autopilot servo clutches.

ANNUNCIATIONS & ALERTS

CAS ALERTS

CAS Window Text	Alert Cause	Audio Alert/ Voice Message
A-ICE FAIL◊	Anti-ice system has failed	Chime/None
L/R ALT OUT	Left and Right Alternators offline	Chime/"Left and Right Alternators Out"
L BUS OFF	No power on the left bus	Chime/None
R BUS OFF	No power on the right bus	Chime/None
CO LVL HIGH	Carbon Monoxide level is too high	Chime/"Carbon Monoxide"
DOOR OPEN	Door not secured	Chime/"Door Open"
FUEL PRESS LO	Fuel pressure low or backup pump is on	Chime/None
FUEL VALVE	Fuel tank is not correctly selected	Chime/"Fuel Valve"
HIGH VOLTS	Left or right bus voltage 31 volts or higher	Chime/"High Voltage"
OIL PRES LOW	Low oil pressure	Chime/"Oil Pressure Low"
UNDERSPEED PROTECT ACTIVE	Underspeed protection is engaged	Chime/"Airspeed"
A-ICE FLUID LO◊	Anti-ice fluid level is low	Single Chime/None
A-ICE PRESS HI◊	Anti-ice fluid pressure is high	Single Chime/None
AIL MISTRIM LEFT	Aileron mistrim present	Single Chime/None
AIL MISTRIM RIGHT	Aileron mistrim present	Single Chime/None
AP MISCOMPARE	Autopilot is unavailable due to miscompare	Single Chime/None
AVN FAN FAIL	One or both of the AVN cooling fans have failed.	Single Chime/None
BELOW ICING MIN SPD◊	Aircraft below minimum airspeed for icing conditions	Single Chime/None

CAS Window Text	Alert Cause	Audio Alert/ Voice Message
L ALT OUT	Left Alternator offline or inoperative	Single Chime/"Left Alternator Out"
R ALT OUT	Right Alternator offline or inoperative	Single Chime/"Right Alternator Out"
AP/PFD DIF AHRS	Autopilot and PFD are using different AHRS	Single Chime/None
L LOW FUEL	Low fuel quantity in the left tank	Single Chime/None
R LOW FUEL	Low fuel quantity in the right tank	Single Chime/None
NO ADC MODES	Autopilot air data modes are not available	Single Chime/None
NO VERT MODES	Autopilot vertical modes are not available	Single Chime/None
OXYGEN	Pressure above 12,000 ft and oxygen off	Single Chime/None
OXYGEN CTRL INOP	Oxygen control is inoperative	Single Chime/None
OXYGEN PRES	Oxygen outlet pressure below 16.5 psi	Single Chime/None
OXYGEN QTY	Oxygen quantity below 250 psi	Single Chime/None
PITOT COLD*	Possible icing conditions are present and pitot heat is off (in-air)	Single Chime/None
PITOT OVHT*	Pitot heat is on in overheat conditions (in-air)	Single Chime/None
PROP HEAT	Propeller heat system is abnormal	Single Chime/None
STALL WARN COLD*	Possible icing conditions are present and stall warn heat is off (in-air)	Single Chime/None
STALL WARN FAIL*	Stall warning has failed	Single Chime/None
STALL WARN OVHT*	Stall warn heat is on in overheat conditions (in-air)	Single Chime/None
STARTER ENGD	Starter relay has power applied	Single Chime/None
A-ICE BACKUP◊	Anti-ice system in back-up mode	None
A-ICE NORM◊	Anti-Ice system is operating normally	None
A-ICE HI◊	Anti-Ice system is operating in high mode	None
A-ICE NORM+	Anti-Ice system is operating normally	None
A-ICE MAX+	Anti-Ice system is operating in maximum mode	None
AP/TRIM OFF	AP/TRIM master switch is in the OFF position	None

CAS Window Text	Alert Cause	Audio Alert/ Voice Message
FAILED AP PATH	An autopilot servo data path has failed	None
OXYGEN CTRL INOP	Oxygen control is inoperative	None
OXYGEN ON	Oxygen system enabled while aircraft is on the ground	None
PITOT COLD*	Possible icing conditions are present and pitot heat is off (on-ground)	None
PITOT OVHT*	Pitot heat is on in overheat conditions (on-ground)	None
RUDR HOLD	Rudder Hold is engaged	None
SPEED BRAKES	Speed brakes are active	None
STALL WARN COLD*	Possible icing conditions are present and stall warn heat is off (on-ground)	None
STALL WARN OVHT*	Stall warn heat is on in overheat conditions (on-ground)	None

♣With optional stall warning computer only / ◊With optional FIKI system only/ ✧With optional TKS system

COMPARATOR ALERTS

Comparator Window Text	Condition
HDG	Difference in heading sensors is > 6 degrees.
PIT	Difference in pitch sensors is > 5 degrees.
ROL	Difference in roll sensors is > 6 degrees.
HDG	No data from one or both heading sensors.
PIT	No data from one or both pitch sensors.
ROL	No data from one or both roll sensors..

REVERSIONARY SENSOR ALERTS

Reversionary Sensor Window Text	Condition
USING AHRS2	The PFD is displaying data from the #2 AHRS.

MESSAGE ADVISORY

Message Advisory	Comments
CO DET SRVC – The carbon monoxide detector needs service.	There is a problem within the CO Guardian that requires service.
CO DET FAIL – The carbon monoxide detector is inoperative.	Loss of communication between the G2000 and the CO Guardian.
ESP FAIL - ESP is inoperative.	The ESP system is inoperative.
ESP OFF - ESP selected off.	The ESP system is selected off.
ESP DEGRADE - ESP IAS mode is inoperative.	The ESP IAS mode is inoperative.
FUEL IMBAL – Fuel imbalance is greater than 10 gallons.	The fuel tank quantities differ by more than ten gallons.
LOW MAN PRES – Manifold pressure is below 15 in hg	The engine manifold pressure is below 15 in hg.
VAPOR SUPPR – Alert to turn on vapor suppression	Vapor suppression system should be enabled.

AFCS ALERTS

Alert Condition	Annunciation	Description
Aileron Mistrim Right	AIL→	Roll servo providing sustained force in the indicated direction
Aileron Mistrim Left	←AIL	
Elevator Mistrim Down	↓ELE	Pitch servo providing sustained force in the indicated direction
Elevator Mistrim Up	↑ELE	
Pitch Trim Failure	PTRM	Pitch trim servo failure. If the pitch trim servo is inoperative, it is considered a pitch axis control failure and all vertical autopilot modes will be unavailable. Autopilot lateral modes may continue to be used and flight director vertical modes may still be available. If AP engaged, take control of the aircraft and disengage AP. If AP disengaged, move MET switch to unstick.
Roll Failure	ROLL	Roll axis control failure; AP inoperative
Pitch Failure	PTCH	Pitch axis control failure. All vertical autopilot modes unavailable. Autopilot lateral modes may continue to be used and flight director vertical modes may still be available.
System Failure	AFCS	AP and MET are unavailable; FD may still be available
Preflight Test	PFT	Performing preflight system test; aural alert sounds at completion Do not press the **AP DISC** Switch during servo power-up and preflight system tests as this may cause the preflight system test to fail or never to start (if servos fail their power-up tests). Power must be cycled to the servos to remedy the situation.
	PFT	Preflight system test failed; aural alert sounds at failure
Overspeed Protection	MAXSPD	Overspeed protection is provided in situations where the flight director cannot acquire and maintain the mode reference for the selected vertical mode without exceeding the certified maximum autopilot airspeed.

<table>
<tr><th>Alert Condition</th><th>Annunciation</th><th>Description</th></tr>
<tr><td>Underspeed Protection</td><td>MINSPD</td><td>
<table>
<tr><th>Flaps</th><th>MINSPD Annunciation</th><th>Aural AIRSPEED Alert</th></tr>
<tr><td>0%</td><td>80 kt</td><td>85 kt</td></tr>
<tr><td>50%</td><td>76 kt</td><td>80 kt</td></tr>
<tr><td>100%</td><td>70 kt</td><td>80 kt</td></tr>
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TERRAIN-SVT ALERTS

Alert Type	PFD/MFD TERRAIN-SVT Page Annunciation	Touchscreen Controller Pop-Up Alert	Voice Message
Reduced Required Terrain Clearance Warning (RTC)	TERRAIN	WARNING – TERRAIN	"Warning; Terrain, Terrain"
Imminent Terrain Impact Warning (ITI)	TERRAIN	WARNING – TERRAIN	"Warning; Terrain, Terrain"
Reduced Required Obstacle Clearance Warning (ROC)	TERRAIN	WARNING – OBSTACLE	"Warning; Obstacle, Obstacle"
Imminent Obstacle Impact Warning (IOI)	TERRAIN	WARNING – OBSTACLE	"Warning; Obstacle, Obstacle"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION – TERRAIN	"Caution; Terrain, Terrain"
Imminent Terrain Impact Caution (ITI)	TERRAIN	CAUTION – TERRAIN	"Caution; Terrain, Terrain"
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION – OBSTACLE	"Caution; Obstacle, Obstacle"
Imminent Obstacle Impact Caution (IOI)	TERRAIN	CAUTION – OBSTACLE	"Caution; Obstacle, Obstacle"

Terrain-SVT System Status Annunciations

Alert Type	PFD/MFD Alert Annunciation	TERRAIN-SVT Page Annunciation	Voice Message
System Test in Progress	TER TEST	TERRAIN TEST	None
System Test Pass	None	None	"Terrain System Test OK"
Terrain System Test Fail	TER FAIL	TERRAIN FAIL	"Terrain System Failure"
Terrain or Obstacle database unavailable or invalid, invalid software configuration, system audio fault	TER FAIL	TERRAIN FAIL	"Terrain System Failure"
MFD Terrain or Obstacle database unavailable or invalid. System operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None
No GPS position	TER N/A	NO GPS POSITION	"Terrain System Not Available"
Excessively degraded GPS signal or out of database coverage area	TER N/A	None	"Terrain System Not Available"
Sufficient GPS signal received after loss or database coverage area entered	None	None	"Terrain System Available"

GARMIN

TAWS ALERTS

Alert Type	PFD/MFD TAWS Page Annunciation	Touchscreen Controller Pop-Up Alert	Voice Message
Excessive Descent Rate Warning (EDR)	PULL UP	PULL-UP	"Pull Up"
Reduced Required Terrain Clearance Warning (RTC)	PULL UP	TERRAIN - PULL-UP or TERRAIN AHEAD - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up" or "Terrain Ahead, Pull Up; Terrain Ahead, Pull Up"
Imminent Terrain Impact Warning (ITI)	PULL UP	TERRAIN AHEAD - PULL-UP or TERRAIN - PULL-UP	Terrain Ahead, Pull Up; Terrain Ahead, Pull Up" or "Terrain, Terrain; Pull Up, Pull Up"
Reduced Required Obstacle Clearance Warning (ROC)	PULL UP	OBSTACLE - PULL-UP or OBSTACLE AHEAD - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up" or "Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up"
Imminent Obstacle Impact Warning (IOI)	PULL UP	OBSTACLE AHEAD - PULL-UP or OBSTACLE - PULL-UP	"Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up" or "Obstacle, Obstacle; Pull Up, Pull Up"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION - TERRAIN or TERRAIN AHEAD	"Caution, Terrain; Caution, Terrain" or "Terrain Ahead; Terrain Ahead"
Imminent Terrain Impact Caution (ITI)	TERRAIN	TERRAIN AHEAD or CAUTION - TERRAIN	"Terrain Ahead; Terrain Ahead" or "Caution, Terrain; Caution, Terrain"

Alert Type	PFD/MFD TAWS Page Annunciation	Touchscreen Controller Pop-Up Alert	Voice Message
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION - OBSTACLE or OBSTACLE AHEAD	"Caution, Obstacle; Caution, Obstacle" or "Obstacle Ahead; Obstacle Ahead"
Imminent Obstacle Impact Caution (IOI)	TERRAIN	OBSTACLE AHEAD or CAUTION - OBSTACLE	"Obstacle Ahead; Obstacle Ahead" or "Caution, Obstacle; Caution, Obstacle"
Premature Descent Alert Caution (PDA)	TERRAIN	TOO LOW - TERRAIN	"Too Low, Terrain"
Altitude Callout "500"	None	None	"Five-Hundred"
Excessive Descent Rate Caution (EDR)	TERRAIN	SINK RATE	"Sink Rate"
Negative Climb Rate Caution (NCR)	TERRAIN	DON'T SINK or TOO LOW - TERRAIN	"Don't Sink" or "Too Low, Terrain"

TAWS System Status Annunciations

Alert Type	PFD/MFD Alert Annunciation	TAWS Page Annunciation	Voice Message
System Test in Progress	TAWS TEST	TAWS TEST	None
System Test Pass	None	None	"TAWS System Test OK"
TAWS System Test Fail	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
Terrain or Obstacle database unavailable or invalid, invalid software configuration, system audio fault	TAWS FAIL	TAWS FAIL	"TAWS System Failure"

Alert Type	PFD/MFD Alert Annunciation	TAWS Page Annunciation	Voice Message
MFD Terrain or Obstacle database unavailable or invalid. System operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None
No GPS position	TAWS N/A	NO GPS POSITION	"TAWS Not Available"
Excessively degraded GPS signal or out of database coverage area	TAWS N/A	None	"TAWS Not Available"
Sufficient GPS signal received after loss or database coverage area entered	None	None	"TAWS Available"

GDL 69/69A DATA LINK RECEIVER MESSAGES

Message	Message Location	Description
CHECK ANTENNA	SiriusXM Info Screen (Touchscreen Controller)	Data Link Receiver antenna error; service required
UPDATING	SiriusXM Info Screen (Touchscreen Controller)	Data Link Receiver updating encryption code
NO SIGNAL	SiriusXM Info Screen (Touchscreen Controller) Weather Datalink Display (MFD)	Loss of signal; signal strength too low for receiver
LOADING	Music Screen (Touchscreen Controller)	Acquiring channel audio or information
OFF AIR	Music Screen (Touchscreen Controller)	Channel not in service
---	Music Screen (Touchscreen Controller)	Missing channel information

Message	Message Location	Description
WEATHER DATA LINK FAILED	Weather Datalink Display (MFD)	No communication from Data Link Receiver within last 5 minutes
ACTIVATION REQUIRED	SiriusXM Info Screen (Touchscreen Controller)	SiriusXM subscription is not activated
DETECTING ACTIVATION	Weather Datalink Display (MFD)	SiriusXM subscription is activating.
WAITING FOR DATA...	Weather Datalink Display (MFD)	SiriusXM subscription confirmed downloading weather data.

VOICE ALERTS

Voice Alert	Description
"Minimums, minimums"	The aircraft has descended below the preset barometric minimum descent altitude.
"Vertical track"	The aircraft is one minute from Top of Descent. Issued only when vertical navigation is enabled.
"Timer Zero"	Timer countdown has expired.
"Traffic, Traffic"	Played when a Traffic Advisory (TA) is issued.
"TAS System Test Passed"	Played when the TAS system passes a pilot-initiated self test.
"TAS System Test Failed"	Played when the TAS system fails a pilot-initiated self test.
"Engaging Autopilot"	Electronic Stability and Protection (ESP) has engaged the autopilot in LVL mode.

GDU 1400W PRIMARY FLIGHT DISPLAY & MULTI FUNCTION DISPLAY

System Message	Comments
XTALK ERROR – A flight display crosstalk error has occurred.	The MFD, PFD and GTC are not communicating with each other. The system should be serviced.
PFD1 SERVICE – PFD1 needs service. Return unit for repair.	The PFD and/or MFD self-test has detected a problem. The system should be serviced.
MFD1 SERVICE – MFD1 needs service. Return unit for repair.	
PFD1 MANIFEST – PFD 1 software mismatch, communication halted.	The PFD and/or MFD has incorrect software installed. The system should be serviced.
MFD1 MANIFEST – MFD 1 software mismatch, communication halted.	
PFD1 CONFIG – PFD1 config error. Config service req'd.	The PFD configuration settings do not match backup configuration memory. The system should be serviced.
MFD1 CONFIG – MFD1 config error. Config service req'd.	The MFD configuration settings do not match backup configuration memory. The system should be serviced.
SW MISMATCH – GDU software version mismatch. Xtalk is off.	The MFD and PFD have different software versions installed. The system should be serviced.
PFD1 COOLING – PFD1 has poor cooling. Reducing power usage.	The PFD and/or MFD is overheating and is reducing power consumption by dimming the display. If problem persists, the system should be serviced.
MFD1 COOLING – MFD1 has poor cooling. Reducing power usage.	
PFD1 FAN FAIL – PFD1 internal fan failure. Unit needs service.	The PFD and/or MFD internal cooling fan has failed. The system should be serviced.
MFD1 FAN FAIL – MFD1 internal fan failure. Unit needs service.	

System Message	Comments
PFD1 BACKLIGHT CALIBRATION – calibration lost. Return for repair.	The PFD and/or MFD backlight calibration cannot be found or is invalid. The system should be serviced.
MFD1 BACKLIGHT CALIBRATION – calibration lost. Return for repair.	
PFD1 KEYSTK – PFD1 [key name] is stuck.	A key is stuck on the PFD and/or MFD bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
MFD1 KEYSTK – MFD1 [key name] is stuck.	
CNFG MODULE – PFD1 configuration module is inoperative.	The PFD1 configuration module backup memory has failed. The system should be serviced.
PFD1 VOLTAGE – PFD1 has low voltage. Reducing power usage	The PFD1 voltage is low. The system should be serviced.
MFD1 VOLTAGE – MFD1 has low voltage. Reducing power usage	The MFD voltage is low. The system should be serviced.

DATABASE SYSTEM MESSAGES

Message	Comments
MFD1 DB ERR – MFD1 navigation database error exists.	The specified GDU detected a failure in one or more databases. Ensure the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 navigation database error exists.	
GTC1 DB ERR – GTC1 database error exists.	The GTC detected a failure in one or more databases. Ensure the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.

Message	Comments
DB MISMATCH – Navigation database mismatch. Xtalk is off.	The GDUs have different navigation database versions or regions installed. Crossfill is off. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
DB MISMATCH – Standby Navigation database mismatch.	The GDUs have different standby navigation database versions or regions installed. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
DB MISMATCH – Terrain database mismatch.	The GDUs have different terrain database versions or regions installed. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
DB MISMATCH – Obstacle database mismatch.	The GDUs have different obstacle database versions or regions installed. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
NAV DB UPDATED – Active navigation database updated.	System has updated the active navigation database from the standby navigation database.

Message	Comments
PFD1 TERRAIN DSP – [PFD1 Terrain awareness display unavailable.	One of the terrain, airport terrain, or obstacle databases required for TAWS in the specified GDU is missing or invalid.
PFD2 TERRAIN DSP – PFD2 Terrain awareness display unavailable.	
MFD1 TERRAIN DSP – MFD1 Terrain awareness display unavailable.	

GIA 63W INTEGRATED AVIONICS UNIT SYSTEM MESSAGES

System Message	Comments
GIA1 CONFIG – GIA1 config error. Config service req'd.	The GIA1 and/or GIA2 configuration settings do not match backup configuration memory. The system should be serviced.
GIA2 CONFIG – GIA2 config error. Config service req'd.	
GIA1 CONFIG – GIA1 audio config error. Config service req'd.	The GIA1 and/or GIA2 have an error in the audio configuration. The system should be serviced.
GIA2 CONFIG – GIA2 audio config error. Config service req'd.	
GIA1 COOLING – GIA1 temperature too low.	The GIA1 and/or GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature.
GIA2 COOLING – GIA2 temperature too low.	
GIA1 COOLING – GIA1 over temperature.	The GIA1 and/or GIA2 temperature is too high. If problem persists, the system should be serviced.
GIA2 COOLING – GIA2 over temperature.	

System Message	Comments
GIA1 SERVICE – GIA1 needs service. Return the unit for repair.	The GIA1 and/or GIA2 self-test has detected a problem in the unit. The system should be serviced.
GIA2 SERVICE – GIA2 needs service. Return the unit for repair.	
HW MISMATCH – GIA1 hardware mismatch, GIA1 communication halted.	A GIA mismatch has been detected, where only one is WAAS capable.
HW MISMATCH – GIA hardware mismatch, GIA2 communication halted.	
GIA1 MANIFEST – GIA1 software mismatch, communication halted.	The GIA1 and/or GIA 2 has incorrect software installed. The system should be serviced.
GIA2 MANIFEST – GIA2 software mismatch, communication halted.	
GFC MANIFEST – GFC software mismatch, communication halted.	Incorrect servo software is installed, or gain settings are incorrect.
COM1 TEMP – COM1 over temp. Reducing transmitter power.	The system has detected an over temperature condition in COM1 and/or COM2. The transmitter operates at reduced power. If the problem persists, the system should be serviced.
COM2 TEMP – COM2 over temp. Reducing transmitter power.	
COM1 CONFIG – COM1 config error. Config service req'd.	The COM1 and/or COM2 configuration settings do not match backup configuration memory. The system should be serviced.
COM2 CONFIG – COM2 config error. Config service req'd.	
COM1 SERVICE – COM1 needs service. Return unit for repair.	The system has detected a failure in COM1 and/or COM2. COM1 and/or COM2 may still be usable. The system should be serviced when possible.
COM2 SERVICE – COM2 needs service. Return unit for repair.	

System Message	Comments
COM1 PTT – COM1 push-to-talk key is stuck.	The COM1 and/or COM2 external push-to-talk switch is stuck in the enable (or "pressed") position. Press the PTT switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 PTT – COM2 push-to-talk key is stuck.	
COM1 RMT XFR – COM1 remote transfer key is stuck.	The COM1 and/or COM2 transfer switch is stuck in the enabled (or "pressed") position. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 RMT XFR – COM2 remote transfer key is stuck.	
COM1 MANIFEST – COM1 software mismatch, communication halted.	The COM 1 and/or COM 2 has incorrect software installed. The system should be serviced.
COM2 MANIFEST – COM2 software mismatch, communication halted.	
LOI – GPS integrity lost. Crosscheck with other NAVS.	GPS integrity is insufficient for the current phase of flight.
LOSS OF GPS NAVIGATION – Poor Satellite Coverage.	Loss of GPS navigation due to insufficient satellite coverage.
GPS NAV LOST – Loss of GPS navigation. Position error.	Loss of GPS navigation due to position error.
GPS NAV LOST – Loss of GPS navigation. GPS fail.	Loss of GPS navigation due to GPS failure.
ABORT APR – Loss of GPS navigation. Abort approach.	Abort approach due to loss of GPS navigation.
APR DWNGRADE – Apr downgraded.	Vertical guidance generated by SBAS is unavailable. Use only LNAV minimums.
TRUE NORTH APPROACH – Change HDG reference to true.	Displayed after passing the first waypoint of a true north approach when the nav angle is set to 'AUTO'.
GPS1 SERVICE – GPS1 needs service. Return unit for repair.	A failure has been detected in the GPS1 and/or GPS2 receiver. The receiver may still be available. The system should be serviced.
GPS2 SERVICE – GPS2 needs service. Return unit for repair.	

System Message	Comments
GPS1 FAIL – GPS1 is inoperative.	A failure has been detected in GPS receiver #1 and/or GPS receiver #2. The system should be serviced.
GPS2 FAIL – GPS2 is inoperative.	
NAV1 SERVICE – NAV1 needs service. Return unit for repair.	A failure has been detected in the NAV1 and/or NAV2 receiver. The receiver may still be available. The system should be serviced.
NAV2 SERVICE – NAV2 needs service. Return unit for repair.	
NAV1 RMT XFR – NAV1 remote transfer key is stuck.	The remote NAV1 and/or NAV2 transfer switch is stuck in the enabled (or "pressed") state. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
NAV2 RMT XFR – NAV2 remote transfer key is stuck.	
G/S1 FAIL – G/S1 is inoperative.	A failure has been detected in glideslope receiver 1 and/ or receiver 2. The system should be serviced.
G/S2 FAIL – G/S2 is inoperative.	
G/S1 SERVICE – G/S1 needs service. Return unit for repair.	A failure has been detected in glideslope receiver 1 and/ or receiver 2. The receiver may still be available. The system should be serviced when possible.
G/S2 SERVICE – G/S2 needs service. Return unit for repair.	
NAV1 MANIFEST – NAV1 software mismatch, communication halted.	The NAV 1 and/or NAV 2 has incorrect software installed. The system should be serviced.
NAV2 MANIFEST – NAV2 software mismatch, communication halted.	

GDC 74A AIR DATA COMPUTER SYSTEM MESSAGES

System Message	Comments
GDC1 MANIFEST – GDC 1 software mismatch, communication halted.	The GDC 74A has incorrect software installed. The system should be serviced.

System Message	Comments
ADC1 ALT EC – ADC1 altitude error correction is unavailable.	GDC1 is reporting the altitude error correction is unavailable.
ADC1 AS EC – ADC1 airspeed error correction is unavailable.	GDC1 is reporting the airspeed error correction is unavailable.
ADC1 SERVICE – ADC1 needs service. Return unit for repair.	The GDC74A should be serviced..

GEA 71 ENGINE/AIRFRAME UNIT SYSTEM MESSAGES

System Message	Comments
GEA1 CONFIG – GEA1 config error. Config service req'd.	The GEA1 configuration settings do not match those of backup configuration memory. The system should be serviced.
GEA 1 MANIFEST – GEA 1 software mismatch, communication halted.	The #1 GEA 71 has incorrect software installed. The system should be serviced.

GTX 33 TRANSPONDER SYSTEM MESSAGES

System Message	Comments
XPDR1 CONFIG – XPDR1 config error. Config service req'd.	The transponder configuration settings do not match those of backup configuration memory. The system should be serviced.
GTX1 MANIFEST – GTX 1 software mismatch, communication halted.	The transponder has incorrect software installed. The system should be serviced.
XPDR1 SERVICE – XPDR1 needs service. Return unit for repair.	The #1 transponder should be serviced when possible.
XPDR1 FAIL – XPDR1 is inoperative.	The #1 transponder is inoperative, including ADS-B OUT functions.
XPDR1 ADS-B FAIL – XPDR1 unable to transmit ADS-B messages.	ADS-B Out is inoperative. Other transponder functions may be available. The transponder may not be receiving a valid GPS position.

GTS 800 TRAFFIC ADVISORY SYSTEM MESSAGES

Message Advisory	Comments
GTS CONFIG – GTS Config error. Config service req'd.	The GTS 800 and GDU have different copies of the GTS 800 configuration, or the Mode S address is invalid. The system should be serviced.
GTS MANIFEST – GTS software mismatch, communication halted.	The GTS 800 has incorrect software installed. The system should be serviced.
TRAFFIC FAIL – Traffic device has failed.	The system is no longer receiving data from the traffic system. The traffic device should be serviced.

GSR 56 MESSAGE ADVISORIES

Message	Comments
GSR1 FAIL – GSR1 has failed.	A failure has been detected in the #1 GSR 56. The system should be serviced.

GMU 44 MAGNETOMETER SYSTEM MESSAGES

System Message	Comments
HDG FAULT – AHRS1 magnetometer fault has occurred.	A fault has occurred in the #1 or #2 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced.
HDG FAULT – AHRS2 magnetometer fault has occurred.	

GRS 77 ATTITUDE AND HEADING REFERENCE SYSTEM MESSAGES

System Message	Comments
AHRS1 TAS – AHRS1 not receiving airspeed.	The #1 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced.

System Message	Comments
AHRS2 TAS – AHRS2 not receiving airspeed.	The #2 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced.
AHRS1 GPS – AHRS1 using backup GPS source.	The #1 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible.
AHRS2 GPS – AHRS2 using backup GPS source.	The #2 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible.
AHRS1 GPS – AHRS1 not receiving any GPS information.	The #1 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced.
AHRS2 GPS – AHRS2 not receiving any GPS information.	The #2 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced.
AHRS1 GPS – AHRS1 not receiving backup GPS information.	The #1 AHRS is not receiving backup GPS information. The system should be serviced.
AHRS2 GPS – AHRS2 not receiving backup GPS information.	The #2 AHRS is not receiving backup GPS information. The system should be serviced.
AHRS1 GPS – AHRS1 operating exclusively in no-GPS mode.	The #1 AHRS is operating exclusively in no-GPS mode. The system should be serviced.
AHRS2 GPS – AHRS2 operating exclusively in no-GPS mode.	The #2 AHRS is operating exclusively in no-GPS mode. The system should be serviced.
AHRS MAG DB – AHRS magnetic model database version mismatch.	The #1 AHRS and #2 AHRS magnetic model database versions do not match.
AHRS1 SRVC – AHRS1 Magnetic-field model needs update.	The #1 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.
AHRS2 SRVC – AHRS2 Magnetic-field model needs update.	The #2 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.

System Message	Comments
AHRS1 SERVICE – AHRS1 needs service. Return unit for repair.	The #1 AHRS has an internal failure. Return unit for repair.
AHRS2 SERVICE – AHRS2 needs service. Return unit for repair.	The #2 AHRS has an internal failure. Return unit for repair.
AHRS1 CONFIG – AHRS1 config error. Config service req'd.	The #1 AHRS has a configuration error. The system should be serviced.
AHRS2 CONFIG – AHRS2 config error. Config service req'd.	The #2 AHRS has a configuration error. The system should be serviced.
AHRS1 CAL – AHRS1 calibration version error. Srvc req'd.	The #1 AHRS calibration version error. The system should be serviced.
AHRS2 CAL – AHRS2 calibration version error. Srvc req'd.	The #2 AHRS calibration version error. The system should be serviced.
GEO LIMITS – AHRS1 too far north/south, no magnetic compass.	The aircraft is outside geographical limits for approved AHRS operation. Heading is annunciated as invalid.
GEO LIMITS – AHRS2 too far north/south, no magnetic compass.	
GRS1 MANIFEST – GRS1 software mismatch, communication halted.	The #1 AHRS has incorrect software installed. The system should be serviced.
GRS 2 MANIFEST – GRS2 software mismatch, communication halted.	The #2 AHRS has incorrect software installed. The system should be serviced.

GTC 570 TOUCHSCREEN CONTROLLER SYSTEM MESSAGES

System Message	Comments
GTC1 CONFIG – GTC1 config error. Config service req'd.	GTC 570 configuration settings do not match those of backup configuration memory. The system should be serviced.
GTC1 SERVICE – GTC1 needs service. Return unit for repair.	The GTC 570 should be serviced..

System Message	Comments
GTC1 COOLING – GTC1 has poor cooling. Reducing power usage.	The GTC 570 has insufficient cooling. If the problem persists, the system should be serviced.
GTC1 FAN FAIL – GTC1 internal fan failure. Unit needs service.	The internal fan in the GTC 570 has failed. The system should be serviced.
GTC1 FAIL – GTC1 is inoperative.	The GTC 570 has failed. The system should be serviced.
GTC1 MANIFEST – GTC 1 software mismatch, communication halted.	The GTC 570 has incorrect software installed. The system should be serviced.
GTC1 CARD1 ERR – GTC1 card 1 is invalid.	The internal SD card in the GTC 570 contains invalid data. The system should be serviced.
GTC1 CARD1 REM – GTC1 card 1 was removed. Reinsert card.	The internal SD card in the GTC 570 was removed. The system should be serviced.
GTC KEYSTK – GTC1 [key name] key is stuck.	A knob or joystick is stuck on the GTC 570 bezel. Attempt to free the stuck control by pushing or turning it several times. The system should be serviced if the problem persists.

GCU 275 PFD CONTROLLER SYSTEM MESSAGES

System Message	Comments
GCU1 CONFIG – GCU1 config error. Config service req'd.	GCU 275 configuration settings do not match those of backup configuration memory. The system should be serviced.
GCU1 FAIL – GCU1 is inoperative.	The GCU 275 has failed. The system should be serviced when possible.
GCU1 KEYSTK – [key name] key is stuck.	A key is stuck on the GCU 275 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
GCU1 MANIFEST – GCU1 software mismatch, communication halted.	The GCU 275 has incorrect software installed. The system should be serviced.

GDL 69/69A SATELLITE DATALINK RECEIVER SYSTEM MESSAGES

System Message	Comments
GDL69 CONFIG – GDL 69 config error. Config service req'd.	GDL 69 configuration settings do not match those of backup configuration memory. The system should be serviced.
GDL69 FAIL – GDL 69 has failed.	A failure has been detected in the GDL 69. The receiver is unavailable. The system should be serviced.
GDL69 MANIFEST – GDL69 software mismatch, communication halted.	The GDL 69 has incorrect software installed. The system should be serviced.

GMA 36 REMOTE AUDIO CONTROLLER SYSTEM MESSAGES

System Message	Comments
GMA1 FAIL – GMA1 is inoperative.	The audio controller has detected a failure. The audio controller is unavailable. The system should be serviced.
GMA1 CONFIG – GMA1 config error. Config service req'd.	The audio controller configuration settings do not match backup configuration memory. The system should be serviced.
DIG GMA1 MANIFEST – Software mismatch, communication halted.	The audio controller has incorrect software installed. The system should be serviced.
GMA1 SERVICE – GMA1 needs service. Return unit for repair.	The audio controller self-test has detected a problem in the unit. Certain audio functions may still be available, and the audio controller may still be usable. The system should be serviced when possible.

GMC 720 AFCS CONTROLLER SYSTEM MESSAGES

System Message	Comments
GMC CONFIG – GMC Config error. Config service req'd.	Error in the configuration of the GMC 720.
GMC FAIL – GMC is inoperative.	A failure has been detected in the GMC 720. The GMC 720 is unavailable.

System Message	Comments
GMC MANIFEST – GMC software mismatch. Communication halted.	The GMC 720 has incorrect software installed. The system should be serviced.
GMC KEYSTK – GMC [key name] key is stuck.	A key is stuck on the GMC 720 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.

MISCELLANEOUS SYSTEM MESSAGES

System Message	Comments
FPL WPT LOCK – Flight plan waypoint is locked.	Upon power-up, The system detects that a stored flight plan waypoint is locked. This occurs when an aviation database update eliminates an obsolete waypoint. The flight plan cannot find the specified waypoint and flags this message. This can also occur with user waypoints in flight plans that are deleted. Remove the waypoint from the flight plan if it no longer exists in any database, or update the waypoint name/identifier to reflect the new information.
FPL WPT MOVE – Flight plan waypoint moved.	The system has detected that a waypoint coordinate has changed due to a new navigation database update. Verify that stored flight plans contain correct waypoint locations.
TIMER EXPIRD – Timer has expired.	The system notifies the pilot the timer has expired.
DATABASE CHANGE – Database changed. Verify user modified procedures.	This occurs when a stored flight plan contains procedures that have been manually edited. This alert is issued only after a navigation database update. Verify the user-modified procedures in stored flight plans are correct and current.

System Message	Comments
DATABASE CHANGE – Database changed. Verify stored airways.	This occurs when a stored flight plan contains an airway that is no longer consistent with the navigation database. This alert is issued only after a navigation database update. Verify use of airways in stored flight plans and reload airways as needed.
FPL TRUNC – Flight plan has been truncated.	This occurs when a newly installed navigation database eliminates an obsolete approach or arrival used by a stored flight plan. The obsolete procedure is removed from the flight plan. Update flight plan with current arrival or approach.
LOCKED FPL – Cannot navigate locked flight plan.	This occurs when the pilot attempts to activate a stored flight plan that contains a locked waypoint. Remove locked waypoint from flight plan. Update flight plan with current waypoint.
WPT ARRIVAL – Arriving at waypoint - [xxxx]	Arriving at waypoint [xxxx], where [xxxx] is the waypoint name.
STEEP TURN – Steep turn ahead.	A steep turn is 15 seconds ahead. Prepare to turn.
INSIDE ARSPC – Inside airspace.	The aircraft is inside the airspace.
ARSPC AHEAD – Airspace ahead - less than 10 minutes.	Special use airspace is ahead of aircraft. The aircraft will penetrate the airspace within 10 minutes.
ARSPC NEAR – Airspace near and ahead.	Special use airspace is near and ahead of the aircraft position.
ARSPC NEAR – Airspace near – less than 2 nm.	Special use airspace is within 2 nm of the aircraft position.
APR INACTV – Approach is not active.	The system notifies the pilot the loaded approach is not active. Activate approach when required.
SLCT FREQ – Select appropriate frequency for approach.	The system notifies the pilot to load the approach frequency for the appropriate NAV receiver. Select the correct frequency for the approach.

System Message	Comments
SLCT NAV – Select NAV on CDI for approach.	The system notifies the pilot to set the CDI to the correct NAV receiver. Set the CDI to the correct NAV receiver.
PTK FAIL – Parallel track unavailable: bad geometry.	Bad parallel track geometry.
PTK FAIL – Parallel track unavailable: Invalid leg type.	Invalid leg type for parallel offset.
PTK FAIL – Parallel track unavailable: Past IAF.	IAF waypoint for parallel offset has been passed.
UNABLE V WPT – Can't reach current vertical waypoint.	The current vertical waypoint can not be reached within the maximum flight path angle and vertical speed constraints. The system automatically transitions to the next vertical waypoint.
UNABLE VNAV – Unsupported leg type in flight plan.	The lateral flight plan contains a procedure turn, vector, or other unsupported leg type prior to the active vertical waypoint. This prevents vertical guidance to the active vertical waypoint.
UNABLE VNAV – Excessive cross-track error.	The current crosstrack exceeds the limit, causing vertical deviation to go invalid.
UNABLE VNAV – Excessive track angle error.	The current track angle error exceeds the limit, causing the vertical deviation to go invalid.
UNABLE VNAV – Unavailable. Parallel course selected.	A parallel course has been selected, causing the vertical deviation to go invalid.
UNABLE VNAV – Reverted to PIT.	The current VNAV is not supported, the Flight Director has reverted to PIT mode.
NON WGS84 WPT – Do not GPS for navigation to [xxxx]	The position of the selected waypoint [xxxxx] is not calculated based on the WGS84 map reference datum and may be positioned in error as displayed. Do not use GPS to navigate to the selected non-WGS84 waypoint.
TRAFFIC FAIL – Traffic device has failed.	The G2000 is no longer receiving data from the traffic system. The traffic device should be serviced.

System Message	Comments
FAILED PATH – A data path has failed.	A data path connected to the GDU or the GIA 63/63W has failed.
LARGE MAG VARIANCE – Verify all course angles.	The GDU's internal model cannot determine the exact magnetic variance for geographic locations near the magnetic poles. Displayed magnetic course angles may differ from the actual magnetic heading by more than 2°.
SCHEDULER [#] – <message>.	Message criteria entered by the user.
SVT DISABLED – Out of available terrain region.	Synthetic Vision is disabled because the aircraft is not within the boundaries of the installed terrain database.
SVT DISABLED – Terrain DB resolution too low.	Synthetic Vision is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed.
TERRAIN DISABLED – Terrain Awareness DB resolution too low.	TAWS is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed.
TRN AUD FAIL – Trn Awareness audio source unavailable.	TAWS is disabled because an aural alert audio source is unavailable.
TRN AUD CFG – Trn Awareness audio config error. Service req'd.	TAWS is disabled because the audio configuration is invalid. The system should be serviced.
CHECK CRS – Database course for LOC1 / [LOC ID] is [CRS]°.	Selected course for LOC1 differs from published localizer course by more than 10 degrees.
CHECK CRS – Database course for LOC2 / [LOC ID] is [CRS]°.	Selected course for LOC2 differs from published localizer course by more than 10 degrees.
[PFD1 or MFD1] CARD 1 REM – [PFD1 or MFD1] card 1 was removed. Reinsert card.	The SD card was removed from the top card slot of the PFD or MFD. The SD card needs to be reinserted.

System Message	Comments
[PFD1 or MFD1] CARD 2 REM – Card 2 was removed. Reinsert card.	The SD card was removed from the bottom card slot of the PFD or MFD. The SD card needs to be reinserted.
[PFD1 or MFD1] CARD 1 ERR – [PDF1 or MFD1] card 1 is invalid.	The SD card in the top card slot of the PFD or MFD contains invalid data.
[PFD1 or MFD1] CARD 2 ERR – [PFD1 or MFD1] Card 2 is invalid.	The SD card in the bottom card slot of the PFD or MFD contains invalid data.
[PFD1 or MFD1] CARD 3 REM – Card 3 was removed. Reinsert card.	The internal SD card was removed from the PFD or MFD. The system should be serviced.
[PFD1 or MFD1] CARD 3 ERR – [PDF1 or MFD1] card 3 is invalid.	The internal SD card in the PFD or MFD contains invalid data. The system should be serviced.
DATA LOST – Pilot stored data was lost. Recheck settings.	The system was unable to save pilot data. Verify settings.
AUDIO MANIFEST– Audio software mismatch, communications halted.	The audio system has incorrect software installed. The system should be serviced.
MAINTENANCE MODE – Maintenance Mode is active.	Maintenance mode is active.
STRMSCP FAIL– Stormscope has failed.	Stormscope has failed. The system should be serviced.
REGISTER CONNEXT – Data services are inop, register w/ Connext.	The GDL 59 is not registered with Connext Services, or its current registration data has failed authentication.
USER MAG VAR – User magnetic variation is active.	User entered magnetic variation is being used for system calculations.
DOC VIEWER MISMATCH – See Document Viewer Page for detailed info.	The documents on the database cards do not match. Ensure the aircraft manufacturer installed documents on the bottom card of each display match.

FLIGHT PLAN IMPORT/EXPORT MESSAGES

In some circumstances, some messages may appear in conjunction with others.

Flight Plan Import/Export Results	Description
'Flight plan successfully imported.'	A flight plan file stored on the SD card was successfully imported as a stored flight plan.
'File contained user waypoints only. User waypoints imported successfully. No stored flight plan data was modified.'	The file stored on the SD card did not contain a flight plan, only user waypoints. These waypoints have been saved to the system user waypoints. No flight plans stored in the system have been modified.
'No flight plan files found to import.'	The SD card contains no flight plan data.
'Flight plan import failed.'	Flight plan data was not successfully imported from the SD card.
'Flight plan partially imported.'	Some flight plan waypoints were successfully imported from the SD card, however others had errors and were not imported. A partial stored flight plan now exists in the system.
'File contained user waypoints only.'	The file stored on the SD card did not contain a flight plan, only user waypoints. In addition, one or more of these waypoints may not have imported successfully.
'Too many points. Flight plan truncated.'	The flight plan on the SD card contains more waypoints than the system can support. The flight plan was imported with as many waypoints as possible.
'Some waypoints not loaded. Waypoints locked.'	The flight plan on the SD card contains one or more waypoints the system cannot find in the navigation database. The flight plan has been imported, but must be edited within the system before it can be activated for use.

Flight Plan Import/Export Results	Description
'User waypoint database full. Not all loaded.'	The flight plan file on the SD card contains user waypoints. The quantity of stored user waypoints has exceeded system capacity, therefore not all the user waypoints on the SD card have been imported. Any flight plan user waypoints that were not imported are locked in the flight plan. The flight plan must be edited within the system before it can be activated for use.
'One or more user waypoints renamed.'	One or more imported user waypoints were renamed when imported due to naming conflicts with waypoints already existing in the system.
'Flight plan successfully exported.'	The stored flight plan was successfully exported to the SD card.
'Flight plan export failed.'	The stored flight plan was not successfully exported to the SD card. The SD card may not have sufficient available memory or the card may have been removed prematurely.

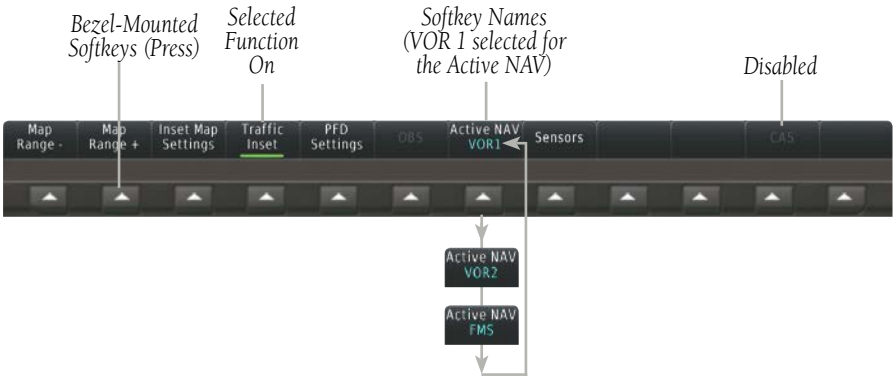
CREW PROFILE IMPORT/EXPORT MESSAGES

Crew Profile Import/Export Results	Description
'No crew profile plan files found to import.'	Displayed if the SD card does not have one or more valid crew profile filenames.
'Overwrite existing profile?'	Displayed if the profile name matches the name of existing profile.
'Profile name invalid. Enter a different profile name.'	Displayed if the profile name is invalid.
'All available crew profiles in use. Delete a profile before importing another.'	Displayed if the maximum number for crew profiles has been reached.
'Crew profile import failed.'	Displayed if the importing operation fails for any other reason.

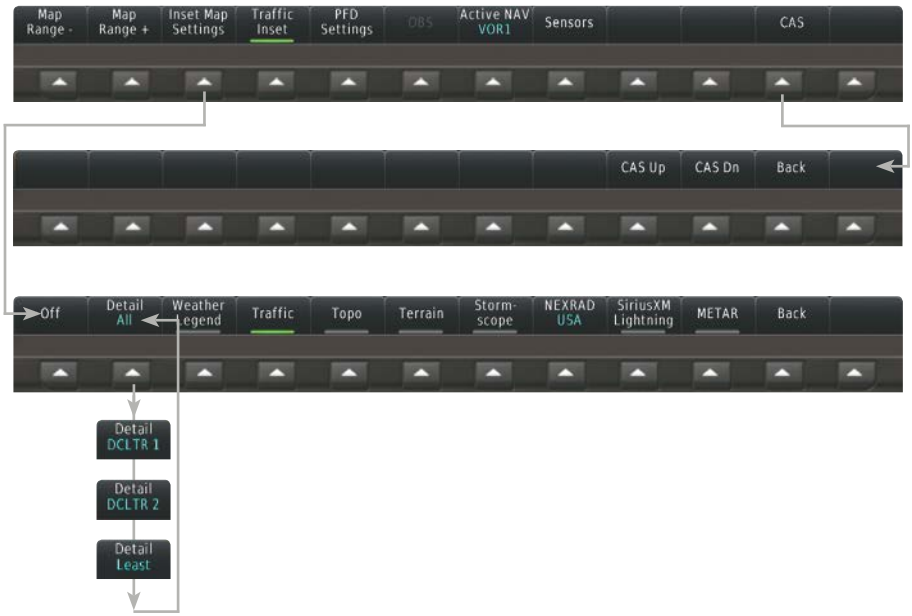
Crew Profile Import/Export Results	Description
'Crew profile import succeeded.'	Displayed if the importing operation succeeds.
'Overwrite existing file?'	Displayed if the filename matches the name of an existing file on the SD card.
'Crew profile export failed.'	Displayed if the export operation fails.
'Crew profile export succeeded.'	Displayed if the export operation succeeds.

APPENDIX

PFD SOFTKEYS

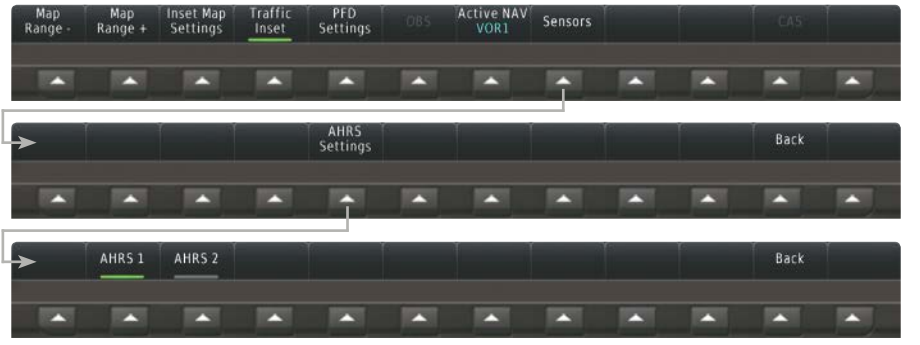


Top Level PFD Softkeys



Inset Map Settings and CAS Softkeys

PFD Settings Softkeys



Sensor Softkeys

Level 1	Level 2	Level 3	Level 4	Description
Map Range -				Decreases the Inset Map display range
Map Range +				Increases the Inset Map display range
Inset Map Settings				Displays the Inset Map display settings softkeys
	Off			Removes the Inset Map from the display
	Detail All **Detail DCLTR 1** **Detail DCLTR 2** **Detail Least**			Selects desired amount of map detail shown on the Inset Map. DCLTR 1 - removes Land/Country Text, Cities, Roads, Railroads, State/Province Boundaries, and River/Lake Names DCLTR 2 - removes the items listed in DCLTR 1 in addition to User Waypoints, Latitude/Longitude Grid, NAVAIDs, Class B Airspaces/TMA, Class C Airspaces/TCA, Class D Airspaces, Other Airspaces/ADIZ, TFRs, and Obstacles Least - removes the items listed in DCLTR 1/2 in addition to NEXRAD, SiriusXM Lightning Data, Airports, Runway Labels, Restricted, MOA (Military)
	Traffic			Adds or removes the display of traffic on the Inset Map. The softkey annunciator is green when the traffic overlay is on. When the traffic overlay is off, the annunciator is gray.
	Topo			Adds or removes the display of map topography on the Inset Map. The softkey annunciator is green when topography is on. When topography is off, the annunciator is gray.

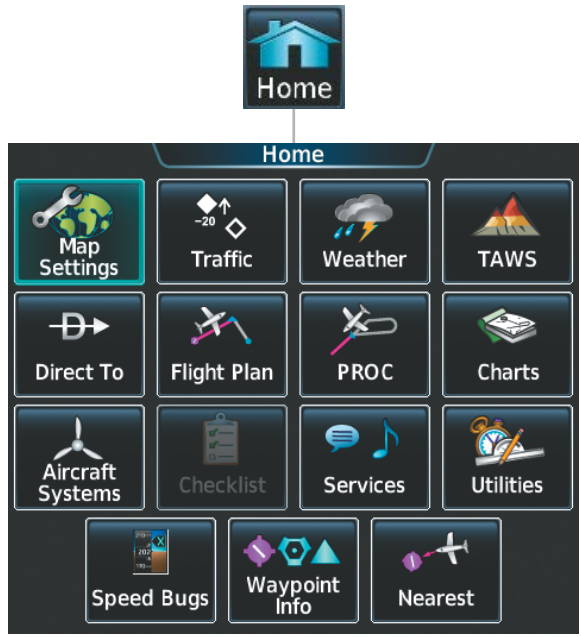
Level 1	Level 2	Level 3	Level 4	Description
	Terrain			Adds or removes the display of relative terrain on the Inset Map. The softkey annunciator is green when the relative terrain overlay is on. When the overlay is off, the annunciator is gray. When the overlay is turned on, the NEXRAD overlay is turned off.
	Storm-Scope			Adds or removes the display of Stormscope lightning data on the Inset Map. The softkey annunciator is green when the lightning overlay is on. When the lightning overlay is off, the annunciator is gray.
	NEXRAD USA **NEXRAD Canada** **NEXRAD Off**			Turns on and off as well as selects the type of NEXRAD data displayed on the Inset Map. When the NEXRAD overlay is turned on, the terrain overlay is turned off. **USA**: Displays only NEXRAD data from radar sites in the United States **Canada**: Displays only NEXRAD data from radar sites in Canada **Off**: Removes NEXRAD data from the Inset Map
	SiriusXM Lightning			Adds or removes the display of SiriusXM Lightning on the Inset Map. The softkey annunciator is green when the lightning overlay is on. When the lightning overlay is off, the annunciator is gray.
	METAR			Displays METAR flags on airport symbols shown on the Inset Map (optional)
Traffic Inset				Replaces the Inset Map with a dedicated traffic display. The softkey annunciator is green when the dedicated traffic display on. When the Inset Map is on, the softkey annunciator is gray.

Level 1	Level 2	Level 3	Level 4	Description
PFD Settings				Displays the PFD settings softkeys.
	Synthetic Vision			Displays the softkeys for enabling or disabling Synthetic Vision features
		Pathways		Displays rectangular boxes representing the horizontal and vertical flight path of the active flight plan
		Synthetic Terrain		Enables synthetic terrain depiction
		Horizon Heading		Displays compass heading along the Zero-Pitch line
		Airport Signs		Displays position markers for airports within approximately 15 nm of the current aircraft position. Airport identifiers are displayed when the airport is within approximately 9 nm.
	PFD Mode			Selects FULL or Split mode on the PFD display.
	Bearing 1			Cycles the Bearing 1 Information Window through NAV1, FMS/waypoint identifier and FMS-derived distance information, ADF/frequency, and Off
	Bearing 2			Cycles the Bearing 2 Information Window through NAV2, FMS/waypoint identifier and FMS-derived distance information, ADF/frequency, and Off
	Other PFD Settings			Displays additional PFD settings softkeys.
		Wind		Displays softkeys to select wind data parameters
			Option 1	Headwind/Tailwind and crosswind components
			Option 2	Wind direction arrow and speed

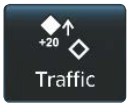
Level 1	Level 2	Level 3	Level 4	Description
			Option 3	Wind direction arrow with direction and speed
			Off	Information not displayed
		Altitude Units		Displays softkeys for setting the altimeter and BARO settings to metric units
			Meters	When enabled, displays altimeter in meters
			IN	Press to display the BARO setting as inches of mercury
			HPA	Press to display the BARO setting as hectopacals
		COM1 121.5		Press to tune COM1 to the emergency frequency 121.5
OBS				Selects OBS mode on the CDI when navigating by FMS (only available with active leg). When OBS is on, the softkey annunciator is green.
Active NAV				Cycles through FMS, VOR1, and VOR2 navigation modes on the CDI
Sensors				Displays the sensor selection softkeys
	AHRS Settings			Displays the AHRS 1 and ARHS 2 softkeys.
		AHRS 1		Selects the number 1 AHRS. The softkey annunciator is green when selected.
		AHRS 2		Selects the number 2 AHRS. The softkey annunciator is green when selected.
CAS				Available only when the list of CAS messages is longer the allotted window. Pressing displays the scroll-up and scroll-down softkeys.
	CAS Up			Pressing scrolls up through the CAS messages
	CAS Dn			Pressing scrolls down through the CAS messages

GTC SCREENS

Home Screen



Shows Navigation Map Pane. Touch button again to access Map Settings Screen on Touchscreen Controller.



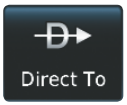
Shows TRAFFIC MAP Pane. Touch button again to access Traffic Settings screen on the Touchscreen Controller

Accesses the Weather Selection Screen or Weather Setting Screen (if only one Weather source is configured) on the Touchscreen Controller, from which the SiriusXM WEATHER Pane, Connext Weather Pane, and Stromscope Pane may be displayed and controlled.

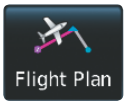
Shows the TAWS pane. Touch button again to access TAWS Settings screen on Touchscreen Controller.

or

Shows the Terrain SVT pane. Touch button again to access Terrain SVT Settings screen on the Touchscreen Controller.



Accesses Direct-To screen on Touchscreen Controller.

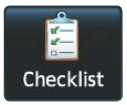


Accesses Active Flight Plan screen on the Touchscreen Controller.

Accesses Procedures screen on Touchscreen Controller, from which Departures, Arrivals, and Approaches may be loaded or activated.

Accesses Charts screen on Touchscreen Controller. Charts are shown on selected display pane.

Accesses Aircraft Systems screen on Touchscreen Controller. Systems information can be selected for display on the Touchscreen Controller, and shown on the selected display pane. Also provides testing functions for aircraft systems.



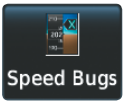
Accesses the Checklists, which will be displayed in the selected Display Pane.

Accesses Services Menu Screen on Touchscreen Controller. Includes optional Iridium voice telephone phone, contacts, and SiriusXM Satellite Radio controls. Only available when a GSR 56 is installed.

or

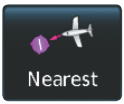
Access SiriusXM Satellite Radio controls.

Minimums, Trip Statistics, Timer, Scheduled Messages, GPS Status, Initialization, Documents Viewer, Screen Cleaning, Event Marking, Crew Profile, and Setup.



Accesses Speed Bugs Screen to turn on/off bugs, restore and edit speed bugs for display on the speed tape.

Provides information about Airports, Intersections, VORs, NDBs, User Waypoints. Also allows creation of User Waypoints.



Provides information about the nearest Airports, Intersections, VORs, NDBs, User Waypoints, Airspace, ARTCC facilities, Flight Service Stations, and Weather reporting stations.

Weather Selection Screen

Shows SiriusXM Weather Pane in the Selected Display Pane. Touch button again to access SiriusXM Weather Settings Screen.

Shows Stormscope® Pane in the Selected Display Pane. Touch button again to access Stormscope® Settings Screen.

Shows Connext Weather Pane in the Selected Display Pane. Touch button again to access Connext Weather Settings Screen.

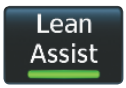
Aircraft Systems Screen

Accesses environmental controls (air conditioning, defogger, fan speed, etc.)

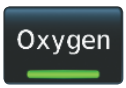
Controls Annunciator system test.

Shows additional EIS information in a display plane. Refer to the EIS section for more information.

Performs fuel calculations (Fuel Remaining/Used, Endurance, Range). Refer to the EIS section for more information.



Activates Lean Assist Mode on the display pane. Provides additional indications for performing engine leaning procedures on the EIS display. Refer to the EIS section for more information about the Lean Assist feature.



Enables/disables supplemental oxygen system. Refer to the EIS section for more information.

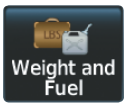
Services Screen

Music Screen provides controls for SiriusXM Satellite Radio including channel selection, volume, and muting settings.

Accesses the SMS Text Messaging Screen to view, edit, and send text messages via the Iridium satellite telephone.

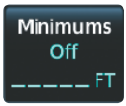
Contacts Screen provides management of contact information. Also provides quick access to calling a stored contact.

Utilities Screen

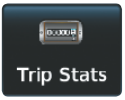


Accesses the Weight and Fuel planning page for entering and editing, Operating Weight, Payload, Fuel, Takeoff, and Landing.

Accesses the Trip Planning Page for viewing or manually editing trip planning parameters (i.e. Departure Time, Ground Speed, Fuel On Board, Fuel Flow, Calibrated Airspeed, Indicated Altitude, Pressure, and Total Air Temperature.



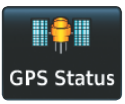
Accesses the Minimums screen on the Touchscreen Controller. Provides controls for the Minimum Descent Altitude/Decision Height alerting function. Button displays the current minimums altitude and source if provided.



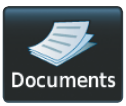
Accesses the Trip Statistics screen on the Touchscreen Controller. Shows information regarding Flight Time, Departure Time, Odometer, Trip Odometer, Average Ground Speed, and Maximum Ground Speed. Also provides controls for trip statistic configuration.

Accesses the Timer screen on the Touchscreen Controller. Controls timer on PFD.

Used to create custom messages to be displayed one-time or periodically. The Touchscreen Controller displays these messages on the Messages Screen on the Touchscreen Controller.

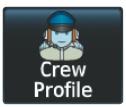


Accesses GPS Status display on MFD. Touchscreen Controller provides additional RAIM prediction function, GPS receiver selection, and SBAS selection.



Shows controls for viewing electronic documents on the Touchscreen Controller, and displays documents on the selected display pane.

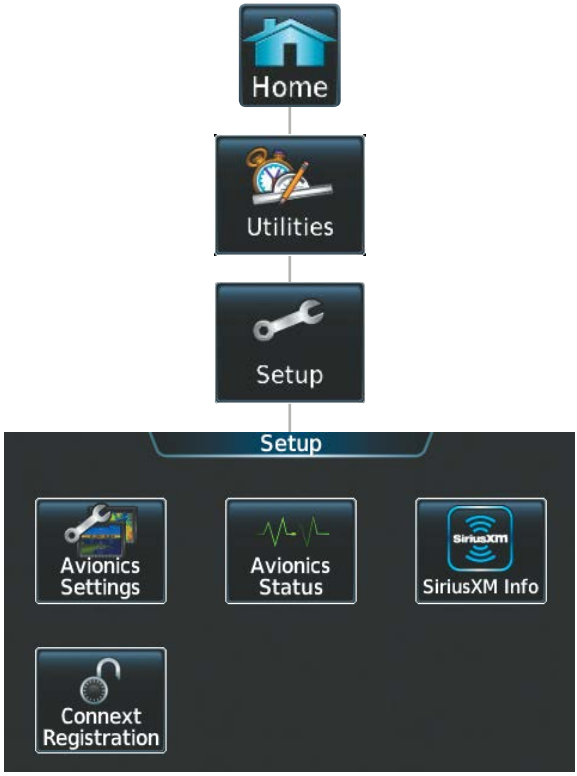
Feature temporarily disables touchscreen input on the glass surface to allow for manual cleaning. Turn or press any knob on the Touchscreen Controller to exit Screen Cleaning Mode.



Controls for activating, and managing crew profiles.

Avionics Settings and Status, Data Link Services registration and status.

Setup Screen



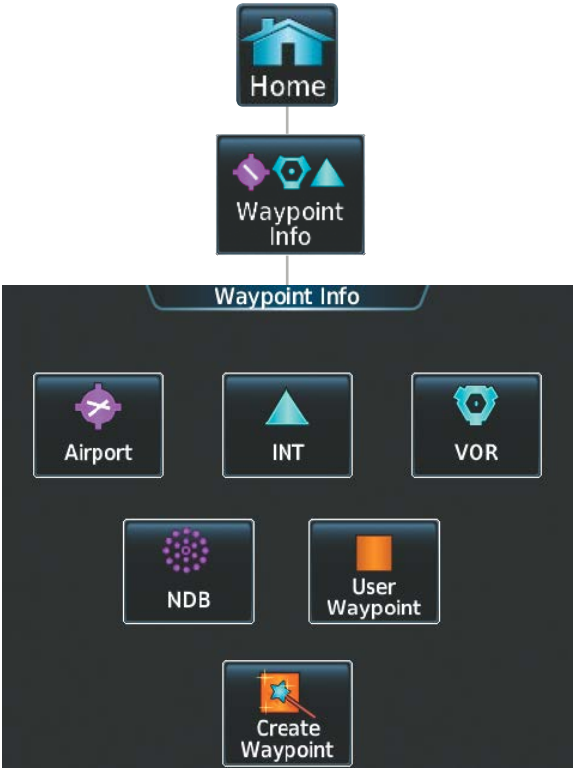
Provides controls for changing system avionics settings, such as, time format, units of measure, airspace alert settings, and MFD Data Bar Fields

Displays information on the Touchscreen Controller for installed LRUs, system software, and installed databases.

Shows the SiriusXM Info Screen on the Touchscreen Controller. Used to activate audio and data services from SiriusXM and to verify subscriptions of SiriusXM Weather products.

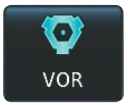
Used to register with Garmin Connext data link services. Also provides information on current Garmin Connext registration.

Waypoint Info Screen



Accesses airport information including frequencies, weather, procedures, charts, runways, and airport directory data.

Shows information for a selected intersection including bearing, distance, and location.



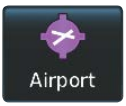
Provides VOR information including frequencies and locations.

Provides NDB information including frequencies and locations.

Provides location information for User Waypoints including a list of User Waypoints.

Create User Waypoints based on present position or a designated location.

Nearest Screen



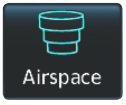
Displays a list of the nearest airports, with runway, bearing, and distance information.

Displays a list of the nearest intersections with bearing and distance information.

Displays a list of the nearest VORs with bearing, distance, and frequency information.

Displays a list of the nearest NDBs with bearing, distance, and frequency information.

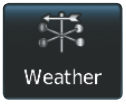
Displays a list of the nearest User Waypoints with bearing and distance information.



Displays information about the nearest airspace and status.

Displays information about the nearest ARTCC facilities including bearing, distance, and frequencies.

Displays the nearest Flight Service Stations with bearing, distance, and frequency information.



Displays the nearest weather reporting sources, bearings, distances, and frequencies.

DATABASE MANAGEMENT

Database information is obtained from third party sources. Inaccuracies in the data may be discovered from time to time. Garmin communicates this information by issuing a Database Alert. These notifications are available on http://fly.garmin.com.

Garmin requests the flight crew report any observed discrepancies related to database information. These discrepancies could come in the form of an incorrect procedure; incorrectly identified terrain, obstacles and fixes; or any other displayed item used for navigation or communication in the air or on the ground. Go to http://fly.garmin.com and select "Aviation Data Error Report".

CAUTION: *Never disconnect power to the system when loading a database. Power interruption during the database loading process could result in maintenance being required to reboot the system.*

The system uses Secure Digital (SD) cards to load and store various types of data. For basic flight operations, SD cards are required for database storage as well as Jeppesen navigation and ChartView database updates. Not all SD cards are compatible with the G2000. Use only SD cards supplied by Garmin or the aircraft manufacturer.

CAUTION: *When downloading updates to the Jeppesen Navigation Database, copy the data to an SD card other than a Garmin Supplemental Data Card. Otherwise, data corruption can occur.*

NOTE: *When loading database updates, the 'DB Mismatch' message will be displayed until database synchronization is complete, followed by turning system power off, then on. Synchronization can be monitored on the Avionics Status Screen on the Touchscreen Controller.*

NOTE: *Loading a database in the system prior to its effective date will result in the expiration date on the power-up screen and the effective date on the Avionics Status Screen being displayed in yellow.*

Jeppesen Databases

The Jeppesen navigation database is updated on a 28-day cycle. The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function. Both of these databases are provided directly from Jeppesen.

The ChartView database should be copied to a Garmin supplied Supplemental Data Card which will reside in the bottom card slot on of one of the GDUs (MFD or PFD). The navigation database must be installed from the Jeppesen or user supplied SD data card. Contact Jeppesen (www.jeppesen.com) for subscription and update information.

NOTE: *After the navigation database is installed, the card may be removed.*

Updating the active Jeppesen navigation database (not using the Dual Navigation Database or Automatic Database Synchronization Features):

1) With the system OFF, insert the SD card containing the new navigation database version into the top card slot of MFD with the label of SD card facing left.

2) Turn the system ON. A prompt is presented on the MFD display:

```
DO YOU WANT TO UPDATE THE STANDBY NAVIGATION DATABASE ON THE BOTTOM CARD?
THE STANDBY DATABASE WILL BE ACTIVATED UPON THE FIRST ON-GROUND POWER CYCLE ON OR
AFTER 00:00 SYSTEM TIME ON THE EFFECTIVE DATE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1211            1212
EFFECTIVE:  26-AUG-2012     18-NOV-2012
EXPIRES:    23-SEP-2012     16-DEC-2012
```

3) Press the **NO** Softkey to proceed to loading the active database.

4) A prompt is displayed, press the **YES** Softkey to update the active navigation database.

```
DO YOU WANT TO UPDATE THE ACTIVE NAVIGATION DATABASE?
SELECTING YES WILL OVERWRITE THE ACTIVE NAVIGATION DATABASE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1211            1212
EFFECTIVE:  26-AUG-2012     18-NOV-2012
EXPIRES:    23-SEP-2012     16-DEC-2012

NO WILL BE ASSUMED IN 8 SECONDS.
UPDATING THE ACTIVE NAVIGATION DATABASE, PLEASE WAIT.
.
UPDATED 1 FILES SUCCESSFULLY!
PRESS ANY KEY TO CONTINUE.
CONTINUING IN 8 SECONDS.
```

5) After the update completes, the display starts in normal mode. Do not remove power while the display is starting.

6) Turn the system OFF and remove the SD card from the top card slot.

7) Turn the system ON.

8) From the Home Screen on the Touchscreen Controller, touch **Utilities > Setup > Avionics Status**.

9) If necessary, touch the **Database** Tab. The Touchscreen Controller shows a list of displays on which databases reside.

10) Touch the **MFD1** button from the list to view the navigation database information. Verify the active navigation database cycle information is correct. While the database is copying, progress can be monitored at the bottom of the applicable database field. When copying is finished, 'Sync Complete' is displayed.

11) Touch **Back** to return to the list of displays, and repeat step 10 to verify the information for each display. The new active navigation database is copied to the internal memory of the PFD, and GTC.

12) When copying is complete to the PFD and GTC, turn the system OFF.

13) Turn the system ON.

Dual Navigation Database Feature

The dual navigation database feature allows each display to store an upcoming navigation database on the bottom SD card so that the system can automatically load it to replace the active database when the new database becomes effective (the next cycle becomes available seven days prior to its effective date).

If a navigation database loader card is inserted into the top SD card slot of a display, and an SD card is in the bottom slot, the system will prompt the user (upon on-ground power up) as to whether the database should be stored on the bottom SD card as the standby database. If the user responds affirmatively, the system will copy the navigation database from the top SD card to the bottom SD card. As long as the bottom SD card remains in the card slot, this standby navigation database will be available for the system to use as the active database as soon as it becomes effective.

The system checks the active and standby databases upon (on-ground only) power-up. If the standby database is current and the active database is out of date, the display will upload the standby database into the active internal database location. Uploading the standby database to the active location takes approximately 45-55 seconds. The pilot is alerted that the update is complete by a system alert message, 'NAV DB UPDATED'.

Loading a standby navigation database:

1) With the system OFF, insert the SD card containing the new navigation database version into the top card slot of the MFD with the label of SD card facing left.

2) Ensure a Supplemental Data Card is inserted into the bottom card slot of each display.

3) Turn the system ON. A prompt is presented on the MFD display:

```
DO YOU WANT TO UPDATE THE STANDBY NAVIGATION DATABASE ON THE BOTTOM CARD?
THE STANDBY DATABASE WILL BE ACTIVATED UPON THE FIRST ON-GROUND POWER CYCLE ON OR
AFTER 00:00 SYSTEM TIME ON THE EFFECTIVE DATE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1211            1212
EFFECTIVE:  26-AUG-2012     18-NOV-2012
EXPIRES:    23-SEP-2012     16-DEC-2012

NO WILL BE ASSUMED IN 21 SECONDS.
```

4) Press the **YES** Softkey. The navigation database is copied to the Supplemental Data Card in the bottom card slot of MFD.

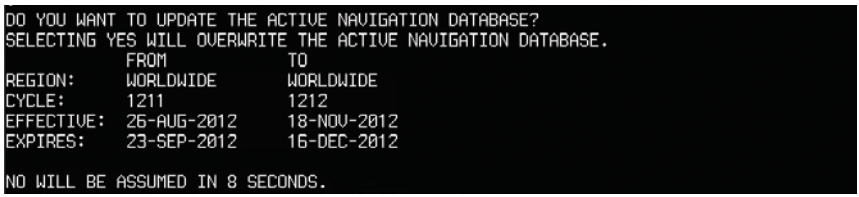
5) After the navigation database files are copied to the bottom card, the display will appear.

```
INITIALIZING SYSTEM

DO YOU WANT TO UPDATE THE STANDBY NAVIGATION DATABASE ON THE BOTTOM CARD?
THE STANDBY DATABASE WILL BE ACTIVATED UPON THE FIRST ON-GROUND POWER CYCLE ON OR
AFTER 00:00 SYSTEM TIME ON THE EFFECTIVE DATE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1211            1212
EFFECTIVE:  26-AUG-2012     18-NOV-2012
EXPIRES:    23-SEP-2012     16-DEC-2012

NO WILL BE ASSUMED IN 18 SECONDS.
UPDATING STANDBY NAVIGATION DATABASE, PLEASE WAIT.
.
UPDATED STANDBY NAVIGATION DATABASE SUCCESSFULLY.
PRESS ANY KEY TO CONTINUE.
CONTINUING IN 9 SECONDS.
```

6) As instructed on the display, press any key to continue. The display will now appear.

```
DATABASE NAVIGATION WILL BE VERIFIED BEFORE USE.
DATABASE STANDBY NAV WILL BE VERIFIED BEFORE USE.
PRESS ANY KEY TO CONTINUE.
CONTINUING IN 6 SECONDS.
```

7) Press any key to continue.


DO YOU WANT TO UPDATE THE ACTIVE NAVIGATION DATABASE?
SELECTING YES WILL OVERWRITE THE ACTIVE NAVIGATION DATABASE.
FROM TO
REGION: WORLDWIDE WORLDWIDE
CYCLE: 1211 1212
EFFECTIVE: 26-AUG-2012 18-NOV-2012
EXPIRES: 23-SEP-2012 16-DEC-2012
NO WILL BE ASSUMED IN 8 SECONDS.

8) Press the **NO** Softkey. The display now starts in normal mode. Since the database effective date is not yet valid, it should not be loaded as the active database. The display now starts in normal mode. Do not remove power while the display is starting.

9) Press any key to acknowledge the startup screen.

10) From the Home Screen on the Touchscreen Controller, touch **Utilities > Setup > Avionics Status**.

11) If necessary, touch the **Database** Tab. The Touchscreen Controller shows a list of displays on which databases reside.

12) The new database is copied to the SD card in the bottom card slot of the PFD. While the database is copying, progress can be monitored at the bottom of the applicable database field. When copying is finished, 'Sync Complete' is displayed.

13) Turn system power OFF.

14) Remove the SD card from the top card slot of the MFD.

15) Apply power to the system.

16) From the **Home** Screen on the Touchscreen Controller, touch **Utilities > Setup > Avionics Status**.

17) If necessary, touch the **Database** Tab. The Touchscreen Controller shows a list of displays on which databases reside.

18) Touch a button from the list to view database information associated with that display (**MFD1, PFD1, and GTC1**).

19) Scroll through the database information and verify the standby navigation database cycle information is correct.

20) Touch **Back** to return to the list of displays, and repeat steps 17 through 19 to verify the standby navigation cycle information for each display.

21) When finished, touch **Back** or **Home**.

AUTOMATIC DATABASE SYNCHRONIZATION FEATURE

When updating the active navigation database, the automatic database synchronization feature automatically transfers the navigation database from a single SD Card to the internal memory of all GDUs and GTCs. When updating all other databases (including the standby navigation database) the data is transferred from a single SD card to the remaining SD cards on each GDU, as well as the internal memory of each GTC. After power-up, the system compares all copies of each applicable database. If similar databases do not match, the most recent valid database is automatically copied to each card in the system that does not already contain that database.

The following databases are checked and synchronized: Navigation, Basemap, SafeTaxi, Terrain, Obstacle, FliteCharts, ChartView, and Airport Directory.

NOTE: The terrain database may take as long as 100 minutes to synchronize using this method. Therefore the user may want to transfer the data using a PC, or connect the system to a ground power source while performing the database synchronization.

The synchronization progress may be monitored on the Database Status Screen on the Touchscreen Controller. This screen shows the synchronization status of each applicable database as follows:

- 'Sync in Progress' with percent complete and time remaining
- 'Sync Complete'
- 'Sync Error'

While database synchronization is occurring, 'Sync in Progress' is displayed along with percent complete and time remaining. When the synchronization is complete for the selected GDU or GTC Database Status Screen, the status is listed as 'Sync Complete'. The synchronization status is only present when a sync is occurring or has occurred on the current power-up.

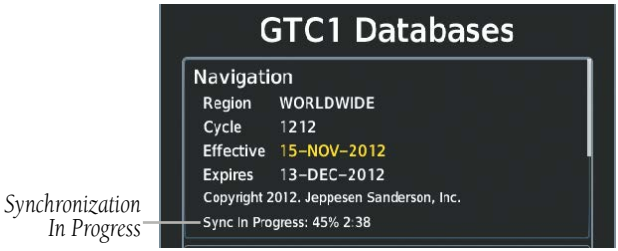
An indication of 'Sync Complete' still requires a power cycle before the synchronized databases will be used by the system.

To view database status:

1) From the **Home** Screen, touch **Utilities > Setup > Avionics Status**.
   Or From the **PFD Home** screen**,** touch **Utilities > Avionics Status.**
2) If necessary, touch the **Database** Tab. The Touchscreen Controller shows a list of displays on which databases reside.

3) Touch a button from the list to view database information associated with that display (**MFD1, PFD1, and GTC1**).

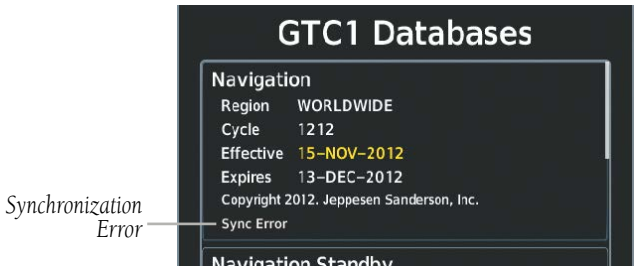
4) Scroll through the database information to view database status.



Avionics Status Screen, Database Information Window, Navigation Database Sync in Progress

Avionics Status Screen, Database Information Window, Navigation Database Sync Complete

If an error occurs during the synchronization, 'Sync Error' is displayed in the synchronization status field. If synchronization completes for one GDU or GTC, but an error occurs for another, the error message will be displayed on the Database Status Screen for the affected GDU or GTC. When an error message is displayed, the problem must be corrected before the synchronization can be completed. A power cycle is required to restart synchronization.



Synchronization Error Message

GARMIN DATABASES

The following databases are stored on Supplemental Data Cards provided by Garmin:

- Expanded basemap
- Terrain
- Obstacle
- SafeTaxi
- FliteCharts
- Airport Directory (AOPA or AC-U-KWIK)

After subscribing to the desired database product, these database products will be downloaded and ultimately stored on three Supplemental Data Cards. A Supplemental Data Card resides in the bottom card slot of each GDU.

Databases residing on Supplemental Data Cards are not stored internally in the displays (except for the Touchscreen Controllers), therefore, a Supplemental Data Card containing identical database versions must be kept in the bottom card slot of each GDU.

The basemap database contains data for the topography and land features, such as rivers, lakes, and towns. It is updated only periodically, with no set schedule. There is no expiration date.

The terrain database contains the terrain mapping data. This database is updated periodically and has no expiration date.

The obstacle database contains data for obstacles, such as towers, that pose a potential hazard to aircraft. Obstacles 200 feet and higher are included in the obstacle database. It is very important to note that not all obstacles are necessarily charted and therefore may not be contained in the obstacle database. This database is updated on a 56-day cycle.

NOTE: *The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.*

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams aid in following ground control instructions by accurately displaying the aircraft position on the map in relation to taxiways, ramps, runways, terminals, and services. This database is updated on a 56-day cycle.

The AOPA or AC-U-KWIK Airport Directory provides data on airports and heliports throughout the U.S., and offers detailed information for over 5,300 U. S. airports, along with the names and phone numbers of thousands of FBOs. These databases are updated every 56 days.

The FliteCharts database contains procedure charts for the United States only. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts will no longer function.

Updating Garmin Databases

The Garmin database updates can be obtained by following the instructions detailed in the 'Aviation Databases' section of the Garmin website (fly.garmin.com). Once the updated files have been downloaded from the website, a PC equipped with an appropriate SD card reader is used to unpack and program the new databases onto an existing Supplemental Data Card. Equipment required to perform the update is as follows:

- Windows-compatible PC computer (running Windows XP, Vista, or Windows 7)
- SD Card Reader: SanDisk SDDR-93, SanDisk SDDR-99, Verbatim #96504, or equivalent
- Updated database obtained from the Garmin website
- Existing Supplemental Database SD Cards (010-00330-42, or -43) from each GDU.

In some cases it may be necessary to obtain an unlock code from Garmin in order to make the database product functional. It may also be necessary to have the system configured by a Garmin authorized service facility in order to use some database features.

After the data has been copied to the appropriate data card, perform the following steps:

1) With system power OFF, remove the Supplemental Data Card from the bottom card slot of the MFD.

2) Update the Garmin databases on the Supplemental Data Card.

3) Insert the Supplemental Data Card into the bottom card slot of the MFD.

4) Apply power to the system.

5) From the Home Screen on the Touchscreen Controller, touch **Utilities > Setup > Avionics Status**.

6) If necessary, touch the **Database** Tab. The Touchscreen Controller shows a list of displays on which databases reside.

7) The new databases are copied to the SD card in the bottom card slot of the appropriate displays. While the database is copying, progress can be monitored at the bottom of the applicable database field. When copying is finished, 'Sync Complete' is displayed.

8) Turn system power OFF.

9) Apply power to the system.

10) From the **Home** Screen on the Touchscreen Controller, touch **Utilities > Setup > Avionics Status**.

11) If necessary, touch the **Database** Tab. The Touchscreen Controller shows a list of displays on which databases reside.

12) Touch a button from the list to view database information associated with that display (**MFD1, PFD1, and GTC1**).

13) Scroll through the database information and verify the database cycle information is correct.

14) Touch **Back** to return to the list of displays, and repeat steps 11 through 13 to verify the database cycle information for each display.

15) When finished, touch **Back** or **Home**.

MAGNETIC FIELD VARIATION DATABASE UPDATE

The Magnetic Field Variation Database is loaded as part of the navigation database, but is copied to, and resides within each AHRS (GRS1 and GRS2). At startup, the system compares the MV DB within the navigation database to that presently residing in each AHRS (GRS1 and GRS2). When a new navigation database is loaded, the system may determine the newly loaded MV DB within the navigation database is newer than that residing in each AHRS. In this case, the system will prompt for an update. This prompt is displayed on the Touchscreen Controller (GTC). Note, in this example, GRS1 is the first AHRS to indicate an update is available. In actuality, this is dependent on which AHRS is the first to report status to the system. GRS2 may be displayed before GRS1. The order is not important, only that both AHRS be updated.

GRS1 MV DB UPDATE
Once started this operation cannot be cancelled.
You will lose access to other operations on this
GTC for the duration of this upload.
This upload should take less than 5 seconds.
Continue Update?
OK
Cancel

Loading the Magnetic Field Variation Database update:

1) With the MV DB prompt displayed, as shown in the figure above, touch the **OK** Button. A progress monitor is displayed as shown in the figure below.

2) When the upload is complete, the prompt for the next GRS upload is displayed. A database mismatch message, indicates the second GRS has not yet been updated.

GRS2 MV DB UPDATE
Once started this operation cannot be cancelled.
You will lose access to other operations on this
GTC for the duration of this upload.
This upload should take less than 5 seconds.
Continue Update?
OK
Cancel

3) Touch the **OK** Button. A progress monitor for the next GRS is displayed as in step 1. When the upload is complete, the system is ready for use.

CLEANING THE TOUCHSCREEN

Screen Cleaning mode makes the touchscreen inactive to facilitate cleaning. The touchscreen can be cleaned using a microfiber or soft cotton cloth dampened with clean water. DO NOT use chemical cleaning agents.

1) From the **Home** Screen, touch **Utilities** > **Setup** > **Screen Cleaning**.

2) Clean the touchscreen.

3) Press or turn any knob to go back.

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p: 886/2.2642.9199 f: 886/2.2642.9099

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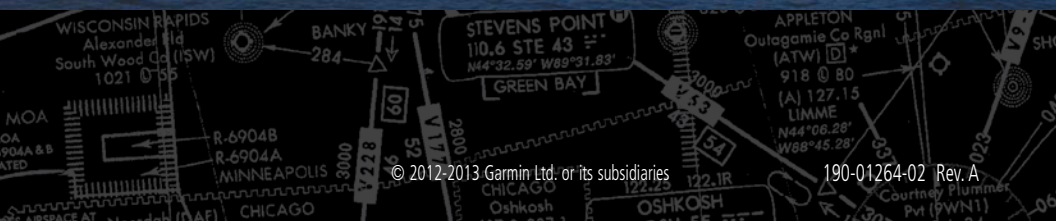

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